THE

NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. MONTHLY. SIMON BROWN, S. FLETCHER, } EDITORS.

SEPTEMBER FORETHOUGHTS.

SEPTEMBER, the first of the Autumn months, is a happy and a pleasant one. It brings Fruits and Fairs, both of which farmers should enjoy. It also brings longer evenings and more time for reading, thought, and planning. Enterprising and successful farmers, as well as skilful mechanics, have a plan by which they work, and to which they conform with more or less strictness. Every good farmer has decided already what field is to be seeded down to grain this fall or next spring, and what sod land shall be cultivated next year in corn or potatoes, and what grass land shall be top dressed. He sees, in anticipation, the smooth and well-worked surface of this or that field clothed with the green of the springing grain, or waving with the golden harvest. He sees the rich and thrifty corn standing thick on that field from which he has just taken a scanty crop of grass, and he works with reference to the accomplishment of these results. He gets in his winter grain, if he did not do it in August, as early in September as possible, that it may become well rooted and make a good "stand" before the setting in of the frost. Winter wheat, we think, should be sowed before the 10th of September. If the ground is well prepared and the seed well covered with a light plough or cultivator and smoothed with a roller, it will better endure the effects of the frosts and winds of winter, and there will be less complaint of winter killing.

Winter wheat starts earlier in the spring, and matures its grain earlier than spring sowed wheat, and often escapes the enemies that are so destructive to the latter. It is liable in some seasons, and on some soils, to be injured by the freezing and thawing and heaving of the surface. But if it is well drilled in, or well covered with the plough and gets well rooted in the fall, the liability to injury from this cause will be more than counterbalanced by the earliness of the crop; by the greater strength of the straw, making it less liable to be broken down by storms; by its greater exemption from insect depredation; and, in general, by the better quality of the flour.

The spring may be cold and wet, and the ground unfit to receive the grain until late; but in August and September, none of these difficulties occur, and the work may be more easily and thoroughly done.

We think the cultivation of winter wheat is too generally given up in New England. Our fathers found it a profitable crop, and so may their sons if they will adapt their method of culture to the changes of climate and soil. For the deeper snows that protected the plant in the winter, they must apply a deeper covering of earth; and for the fertility of the virgin soil, they must supply the elements of nutrition which the wheat requires.

The practice of ploughing the soil in the fall, for all crops, is we think growing in favor. Worms and the larvæ of various insects increase in lands long under cultivation, and fall ploughing seems to be the best and almost the only remedy we have for this increase. Where lands are level, manure may be applied and covered in the fall with little if any loss, and certainly with great improvement to the mechanical condition of the soil. The manure becomes more thoroughly incorporated with the soil, and both manure and soil are found more fine and mellow, when we come to work them in the spring. The manure that has been accumulated in the summer may be carted easily at this season, and may be used in a green state without composting, thus saving a good deal of labor. We think this is the only time and way in which green manures should be applied. Indeed many who advocate the use of green manures, are in the habit of applying them in the fall, thus making a compost on the spot where it is wanted.

But there is much other work to be done in September. The grain should be threshed and carefully secured from the mice and other vermin. Corn fodder should be attended to with care, and housed as soon as dry. Ditches should be cleaned out and a good supply of material prepared for the compost heap. Calves and colts should be brought up as the frosty nights come on, and be taught to eat hay and roots, and thus be prepared for the winter.

Now is the best time to fatten swine. They will lay on fat much faster in the pleasant weather of September and October than at a later season, when half their food is needed as fuel to keep them warm. Improve the present fine weather, for the winter is fast approaching.

WARTS ON HORSES have been cured by a wash of Sal Soda and water.

LETTER FROM THE FARM.

CONCORD, Aug. 7, 1868.

GENTS.—After an absence of two weeks among the White Mountains, I find a great change in the vegetable world about me here. The abundant rains of spring had thoroughly wet the subsoil, so that when the intensely hot weather of the latter part of July came, plants grew with a rapidity entirely unprecedented in my observation. It was really wonderful how soon the gardens and fields seemed crowded with the most luxuriant vegetable life and vigor. Grass became too heavy to wave, and was falling to the ground; barley stalks were bowing with heavy heads of ripened grain, while the Indian corn, only a few days ago backward and unpromising, had now rushed into comely proportions, and gave great promise of an abundant crop. The potato crop, also, appeared finely, save where the slug had robbed the stems of their leaves. In some fields serious injury has been done in this way, so that the putting forth new leaves will greatly retard the growth of tubers, and the crop will probably be light.

The rye and barley crops are good, and have been generally well secured. Some fields of oats about us have been cut, and yielded well.

The hay harvest on uplands has been excellent in quantity and quality, and most of it housed in fine condition before the recent rains and cloudy weather set in. The "runs" among the uplands were good, but large, low meadows, where water remained until the last of May or into June, will be light and unprofitable. The grass upon them is thin, and partially covered with a dried slimy substance, which adhered to it as the water slowly receded from the meadows. The loss to farmers in Middlesex county, in this respect, will be very heavy.

I have had the pleasure, to-day, of visiting some farms in this neighborhood, and among them that of Capt. JOHN B. MOORE. He has about sixty acres in one enclosure, most of which has yielded a very heavy crop of English grass this season. In one corner of it, I found about one acre in asparagus, as much in strawberry plants, and several varieties of potatoes, millet, Indian corn, and many other plants, which he is testing in order to learn what is best for future cultivation. On a level,

some seventy-five feet above this field, I visited others, cultivated in strawberries, corn, cabbages, squashes, melons, young grape vines, potatoes, &c., and 100 peach trees. Of the latter I found but one tree attacked by insects, and no signs of the yellows. The trees were all budded and in vigorous condition. The land on which these crops stand is a sandy loam, and not subject to early frosts,—the peach trees giving no signs of being injured by the cold of winter.

On another field, some sixty feet above the level of the brook in the valley, I visited his grape vineyard, containing about two acres. With the exception of a few plants where the wind had free sweep over the edge of the hill, the vines were all full of heavy foliage and in vigorous growth. The oldest vines—some eight or ten years old—were not generally in fruit, while those of half that age are loaded, even overloaded, with large bunches of the finest grapes. Some of the vines are tied to stakes and others trained upon wire trellises, in order to determine the cheapest and best modes of managing them. All these vines are set upon land covered with small stones, what is called a "cobbly knoll," and was originally covered with a growth of yellow pines, scrub oaks and white birches. It has received but little manure beyond a dressing of leached ashes. Mr. Moore does not believe in the theory that the grape needs *no* manure, but thinks that *high* manuring tends to injure rather than benefit it,—and that the appearance of the vine will indicate clearly enough when it needs more nourishment.

We have in this town some twenty-five acres in grape vines. I have visited no other fields this season than that of which I have spoken, and cannot, therefore speak of their present condition. This one is well worthy the examination of those who intend to engage in the culture of the grape.

Nearly all the crops on Mr. Moore's farm are looking finely. All the hoed crops are in straight lines and kept scrupulously clean,—what weeds had crept in during the busy season of haying, were being taken up and carried away from the fields. He stated to me the income from some of the crops, such as asparagus and strawberries, but I was too much interested in seeing and hearing to make notes, so that I will only say that the cash items were quite large. He is a skilful gardener as well as farmer, and is doing much to introduce what is called "market gardening" among our farmers. Indeed, a large business is already going on in this direction.

Our people are improving the "rainy season" to lay down their lands to grass, and get in turnips for winter stock.

My visit to the Mountains revealed many changes that have taken place since my first "call upon them." Fine hotels and excellent roads are now common where the dark forest held sway then, so that wonderful works of art are now mingled with the majestic scenery of the region. Among the works of man, the *White Mountain Railroad*, is the most notable. It is now nearly completed; is three miles long, ascends the face of the mountain in a straight line, and *rises one foot in three.* The ascent is made by the engine turning a cog-wheel among strong iron pins on a centre track, and not by a stationary engine as is generally supposed. It is a wonderful work of art, almost frightful to look at, but appears to be substantial and safe. The road is made of timber and is a continuous bridge, crossing the ravines at the same degree of elevation as when rising the face of the mountain.

My trip was a pleasant one, and I only wish that all your readers, who desire it, may enjoy a ramble among those "Crystal Hills."

Truly yours, SIMON BROWN.

MESSRS. R. P. EATON & CO.

BUTTER AND CHEESE.

We have received a somewhat lengthy article from our correspondent, "W. H.," who has long been of the opinion that by our ordinary process of making butter and cheese much of the valuable qualities of the milk are lost. The success which has attended the extraction of butter from the whey of cheese factories, he regards as proof of the correctness of his position. He believes that when the cream is taken from the milk for making butter, there is removed with the globules of butter, something not essential to the production of butter, but which is of value in the production of cheese; just as the cheese makers have found that in setting the milk for cheese, they fail to work in all the butter producing qualities of that milk. As, then, butter has heretofore been lost in the whey of the cheese-maker, so cheese goes to waste in the buttermilk of every churning.

Now as a patent has been obtained by Mr. Page, of Adams, N. Y., for his process of extracting butter from whey, may not some process be devised by which the butter may be extracted from milk without removing those properties which are useful in the manufacture of cheese?

Our correspondent's circumstances not being favorable to the prosecution of experiments to determine this point, he submits the subject to dairymen. He however alludes to an article published some time ago in the *Scientific American*, about a process of extracting butter by burying milk in a cool place in the earth, as one that may be followed up to a practical result. Instead of enveloping the milk in a series of linen bags, he proposes a box with shelves for the milk, and if this proves successful, then enlarge the box to a milk-room, in such a manner that the whole should be subjected to those influences of the earth which, in case of the milk in the bag, separated the particles of the butter from the milk buried as described by the *Scientific American*. After the removal of the butter in this way, the milk, on his theory, would produce first quality cheese.

WOOLEN EXPOSITION.

The first exhibition by the Woolen Manufacturers' Association of the Northwest was opened at Chicago, August 4. The 1500 specimens of manufactured goods from eighty mills, some woolen machinery, and a small but creditable display of wool, occupied the five floors of a new building, 80 by 100 feet. The Mayor of Chicago, the Governor of Illinois, Hon. J. B. Grinnell, of Iowa, Col. Capron, Agricultural Commissioner, and Mr. John L. Hayes, of Boston, were among the speakers at the opening and other public exercises of the occasion.

At a business meeting the following resolution was adopted unanimously:

Resolved, That the rules adopted at the convention in February, 1868, governing the members of the association in buying wool, are hereby rescinded, and members left free to purchase wool on its own merits.

A committee, of which Colonel Needham of Massachusetts was a member, was appointed to submit recommendations governing the purchase of wool.

Mr. W. G. Coulter delivered an address, in which he discussed the subject of wool manufacture, and adduced facts to show that the centre of the woolen interest should be west of the lakes. He also made a comparison of the relative cost and profits of woolen mills in Chicago and Lowell, and presented statistics showing that goods can be manufactured twenty-five per cent. cheaper at the West than at the East.

Mr. G. B. Stebbins, of Detroit gave some statistics of the growth of the wool manufacture in England and the United States, and spoke as follows of this interest at the West:

It is well that wool-growers and manufacturers meet here on common ground, for it is a recognition, too long delayed, of the unity of interest between farmer and manufacturer—the one providing the raw material and the food for the workers in the mills, the other adding by skill and labor to the beauty and value of that material, and consuming the products of the farm. These two divisions of the great army of honorable workers, closely linked as they are by ties of mutual help and dependence, may well blazon on their standards the motto, "United we stand, divided we fall." They are natural allies, destined to fight out the battle of life on the same line, and to win a common victory over poverty and ignorance.

With our great breadth of soil and varied climate, fitted for the production of every kind of wool, it is the "manifest destiny" of our wool-growers to raise all that our manufacturers want, and not compel them to import over seventy million pounds a year, as at present. The wool clip of Great Britain, with her narrow domain and poorer soil, is some 260,000,000 pounds yearly, while ours is less than half as much. Surely we should go far beyond her; and, judging by "the signs of the times" in this wonderful exposition, that's what you men of the western farms mean to do. And it is a characteristic of the West to accomplish what is well and wisely begun.

Mr. J. L. Hayes, of Boston, would have the Eastern manufacturers make the richer class of goods, while the good and cheap are produced at the West. He said:

Now, in this country we have not began to do the work we ought to do. We are just on the borders of the great field of industry. Why in England, the manufacture of carding wool constitutes but a small portion; the manufacture of dress goods, or the combing wool industry, is the great work. There are two classes of manufactures—the carding wool and the combing wool. The carding wool for cloths, the combing wool for dress goods. The combing wool industry in England is very much larger than the other. The combing wool industry of France is three times as much as the carding industry. And in this country the combing wool industry is not over a tenth of the carding wool industry. But we have all the West open to us, and see what a field it will give us for the manufacture of carding wool—especially in this State. The wool corporations will be glad to do your work. You must furnish us with the wool—the right kind of wool. Now at this very time, wool, the best of Ohio wool, such as you raise, is worth 45 cents per pound. Yet the right kind of wool, such as might be raised here on these Western prairies, would be worth 75 cents; while the mutton would also be better and bring a higher price. See what an inducement there is to open that industry.

Gentlemen, in these remarks I simply intend to point out some improvements to you. Your duty as manufacturers is to push this carding industry forward. Drive the East into the combing wools. You, wool-growers, grow the combing and fine wools, that we may not be dependent upon England, and France and Germany for our dress goods. There is a vast field open for you, and to the energy and talent of the American people. There will be room enough.

The display of cloths, jeans, beavers, shawls, flannels, yarns, knit goods, and in short every description of woolen goods, is pronounced by the Chicago *Republican* a magnificent one in every sense of the word, whether it be regarded either in point of quantity or quality.

HORSES AND ROADS.

Dr. Holland, in a letter to the Springfield *Republican*, makes some important suggestions upon the subjects of roads. There is no doubt that the bad roads in this country subject our people to an enormous tax in horses and carriages, nor that it would be better economy in the end to make smooth and hard roads. Our roads in Eastern Massachusetts are probably as good as can be found in any part of the country, and yet it takes double the amount of horse power to draw a load to market from any point within twenty miles of Boston, that would be necessary if the roads were such as they might be made.

But if we do not have the roads we must put the expense into horses and horse-keeping, and the simple question is, into which shall we put the cost, roads or teams? Shall we have roads on which one horse can carry a ton of produce with ease, or roads requiring two horses to carry the same load?

A few years ago it was the fashion to build all roads straight from one point to another, going over all the intervening hills. This has cost an immense outlay in horse power, besides the increased cost of keeping such roads in repair, owing to the damage from washing. When will people learn that it is no further around a hill than over it? and that it requires less power to move a weight upon a level surface than to raise it into the air? We quote from the *Republican*:—

The point which I wish to impress upon my American reader is simply this, that the English horse employed in the streets of a city, or on the roads of the country, does twice as much work as the American horse similarly employed in America. This is the patent, undeniable fact. No man can fail to see it who has his eyes about him. How does he do it? Why does he do it? These are most important questions to an American.

Is the English horse better than the American? Not at all. Is he overworked? I have seen no evidence that he is. I have seen but one lame horse in London. The simple explanation is that the Englishman has invested in perfect and permanent roads what the American expends in perishable horses, that require to be fed. We are using to-day in the little town of Springfield, just twice as many horses as would be necessary to do its business if the roads all over the town were as good as Main street is from Ferry to Central. We are supporting hundreds of horses to drag loads through holes that ought to be filled, over sand that should be hardened, through mud that ought not to be permitted to exist. We have the misery of bad roads, and are actually or practically called upon to pay a premium for them. It would be demonstrably cheaper to have good roads than poor ones. It is so here. A road well built is easily kept in repair. A mile of good McAdamized road is more easily supported than a poor horse."

SUBSOILING.

This is attended with some labor and expense, and many farmers are deterred from practicing it on this account. But next to draining we believe it affords the best security for a crop, especially of corn and grass, in either a dry or wet season. It breaks through the hard pan, and allows the stagnant water to sink below the roots of the growing plants. In a dry season it allows the roots to penetrate deeply, and find the moisture in the mellow soil. A few years since a gentleman in Queens County, N. Y., wrote as follows, in the autumn, after a severe drought:—

"During the month of August I was invited by a friend to view his corn and take note of his method. The land had been subsoiled, and although the drought was severe, the leaves were a fine dark green, and the silk luxuriant, seeming scarcely to suffer from the great heat. In the adjoining lot, separated only by a rail fence, the stalk was drying up, and the ears small and poorly filled.

A spade was procured, a hole dug; about eight inches deep we came to a hard pan, and with considerable labor broke through the pan; below, the earth was dry as ashes. The subsoiled lot was then tried; the spade went down into a mellow soil, and at two spades depth, it was moist and mellow. No wonder his corn looked flourishing.

I have examined several other lots of corn. The land that was subsoiled all stood the drought well.

Early in July I visited two lots of grass. No. 1 about nine acres, the soil naturally good, with a loamy subsoil. One-half had been subsoiled. The timothy on this part was over four feet high, and made more than three tons of hay to the acre. The other half producing not more than half as much, all put down at the same time. Lot No. 2, twelve acres, with a gravelly subsoil. Four acres had been subsoiled. Four acres had been ploughed seven inches and the other four lightly ploughed. The subsoiled part produced over ten tons. The lot ploughed seven inches, a ton and a half to the acre, and the part poorly ploughed, very little but daisies and weeds."

Here is the result of actual experience in a severe drought. It is certainly worthy of consideration.

For the New England Farmer.

THE GARDEN IN SEPTEMBER.

Having labored and enjoyed the fruit of our labor, in part, up to the present time, it now becomes us to save up the remaining products of the garden, and to provide for the extension and continuance of the luxury of green vegetables, &c.

Weeds will continue to grow, but should never be allowed to interfere with other vegetation, as they surely will if allowed to grow at all. Where impracticable to use the hoe, they should be hand-pulled. Weeds allowed to form seed will pretty surely be capable of maturing the same by the aid of the juices of the stalk; and if matured will very likely be scattered to perpetuate their species and give us trouble in the future. The safest way is never to allow a weed to so far mature as to come into blossom.

Watch for early frosts, which, in this latitude, frequently come by the 10th of September; while often if that time is passed without frost, we go free till about the 20th. Some vegetables, with a little protection, may grow on for two or three weeks after the first "cold snap" is over.

During this month many of the products of the garden arrive at perfection, and all remaining ones are fast becoming ready to be harvested, requiring care that nothing goes to waste. Gather and take care of all surplus. If not needed for immediate use, store it properly, market, or distribute it among your less fortunate neighbors, who would be glad to receive it. Leave nothing to decay, merely because it is in abundance. If nothing else can be done with it, feed it to the stock or put it in the compost heap.

BEANS.—The earlier sorts of pole beans will now be ripening. Save seed from the best and earliest. Limas are now plenty,—save some of the earliest for seed, and, with the others, lay in a dry, airy place, to cure. Before hard frosts, pick all green ones; shell and dry for winter use. Pick the late string beans before they become tough; pickle or can for future use.

CABBAGE.—Late planted will need frequent hoeings. Ordinary frosts and cool nights will not stop their growing, but cause them to harden their heads against a more severe freeze. Seed may be sown this month, where it is desirable to winter over in cold frames for early spring planting, greens, &c.

CELERY.—When the plants have attained a height of six to ten inches, the earthing up process should commence; and in earthing, too much care cannot be used. A bungler will often spoil half the crop by breaking the leaves, getting dirt into the crowns of the plants, &c. Earthing up will need repeating once in eight or ten days, according as the plants grow. At the first earthing, close the leaves carefully together with the hands, and while you hold them in position with one hand, draw the dirt up and make it firm with the other, close against the plants. This will hold them in position. Be very careful not to break any leaves, or let any dirt get to the crowns; and never earth up except when both soil and plants are dry, or decay is sure.

CORN.—Save and dry for winter use. Canning is so risky that few like to incur the trouble and risk. Last year directions came out in several papers for salting the green corn in the husk, by packing down in salt in a barrel. A friend informed me that he tried it last season, and that on taking up some and soaking it in fresh water for some days, and then boiling it and preparing it daintily, none of his family could eat it; for, said he, besides being salted, it was *salt*. He tried the pigs with some of it freshened, but they ran away from it, squealing. Save of the earliest crop a sufficiency of the finest, earliest ears, for seed; strip off the husks, retaining two or three inner ones, and braid in tresses and hang in a dry, airy place. Cut and save the stalks for the cattle, or feed them out green.

CUCUMBERS.—Gather the pickles by going over the vines every day and gathering all sizable ones; cutting them with scissors or a sharp knife, and leave half an inch of stem on each; using care not to break or tear the vines. Ripe ones may be gathered and the seed scraped out and left to ferment and work clear in a pail or tub, and then wash clean, dry and save. Sweet pickles may be made of those nearly ripe.

MANURE.—Remember that now is the time to add to the compost heap for next year. Such are the laws of nature, that after the soil has produced a crop and it is removed, the elements of the crop must be replaced, or the soil will eventually refuse to yield her increase; and upon decayed animal and vegetable matter must we largely depend to replace these elements.

MELONS.—Pick as soon as ripe, which may be known by the stem parting readily from the melon. Watermelons are sounded by rapping them with the fingers,—a dead sound indicating ripeness. Save the seeds of all the best specimens.

PARSLEY.—If seed be sown this month the young plants may be kept over by covering with straw or litter, and be ready early in spring.

SQUASH.—The summer varieties have ceased producing eatable squash. Pick and save those allowed to ripen for seed; pull up the vines, cut them and add to the compost heap. The Marrow and Hubbard may be commenced upon for use, as the Hubbard is quite good, even before it is ripe.

TOMATOES.—These will be in their greatest prime the fore part of the month. Bottle a full supply, and make catsup. Eat them freely,—they are healthy, either cooked or

raw. A little protection from early frost will add some weeks to the season.

GRAPES.—Early varieties will ripen this month. Pick them with care, using shears or a sharp knife to cut the stem; handle with care, and do not rub off the bloom, if to be kept for some days, or marketed.

BLACKBERRIES AND RASPBERRIES, after yielding their crop of fruit, should have the old canes cut out and all superfluous shoots removed, leaving only one or two for next year's fruiting. WM. H. WHITE.

South Windsor, Conn., 1868.

For the New England Farmer.

SUMMER FALLOWING.

Where a field which was originally good soil, is so much reduced, or where the soil is naturally so light, sandy, and poor as to produce hardly grass enough to be worth mowing, and you have no dressing to spare for it, and you do not wish to turn it into pasturage, what should be done with the field?

This important question remains unsolved. It has occupied the minds of farmers since I was a boy. Every year all the agricultural papers in the land are beset with the inquiry: How shall I make my land productive without barn-yard manure, which I have not got, or without artificial dressing, which I cannot afford to buy? The cost of artificial dressing, when carried back into the interior of the country, with the freight added to first cost, is, nearly all farmers say, too expensive. We can buy gold too dear.

I propose, then, that farmers in New England should raise less grain, and more grass. Grass should be the chief crop. Grass is the great source of manure,—of dressing which never fails to agree with any and all kinds of soil. Grass is milk, butter, cheese, beef, mutton. It is the fuel that generates the power which drives the plough, the reaper and mower, and carries us along the highway, for profit or pleasure.

The South and West may get along with grain and corn fodder; but here in New England, grass is power, is life, and the cultivation of it is imperative. Grass should be as much a *specialty* here, as grain is at the West. If this is so, let us see what should be done with the worn-out mowing fields, which are so common in the east.

Almost every farmer in New England has a larger or smaller patch in his mowing field, which, if allowed to lay fallow one, two, or three years, and ploughed every year, would improve by the operation enough to pay for the labor and loss of use; but I never yet saw a farmer that could resist the temptation to put oats or some kind of grain on to land thus lying unproductive. Such a crop of course takes the cream of the land, and leaves for the grass seed only the skim milk of the soil. The seed to be sown upon such fallow should be grass seed *alone;* and then the grass would pay all the bills. A good crop of grass can be grown from the seed the first year, if sowed *alone* in April or May. Then, why should farmers persist in the bad practice of sowing grain with grass seed? It is an error, if not something worse.

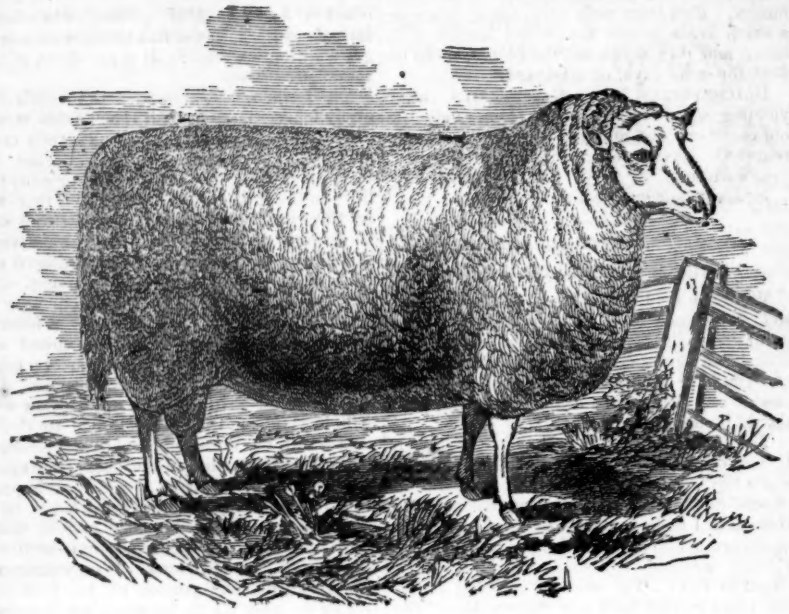
The farmers in Maryland and Virginia generally leave one portion of their fields turned out to rest every year, and rotate their crops of tobacco, corn, wheat or oats. They say that the action of the rain and air adds fertility to the soil. Some may object that two or three years thus required to bring such fields into productiveness, is a long time. But how can it be done quicker without manures? Hoed land is *always* improving, while swarded land remains the same from year to year; or, if mowed, there will be at least no improvement. Clover might be sowed and plowed in to hasten productiveness. So might manure be bought for the same purpose. But my object in writing this is not to show what will enrich ground the fastest, but to decide what shall be done with worn out fields, to bring them to fertility in the cheapest way.

I believe a three years' rest for such poor, worn-out lands in our old mowing fields, to be ploughed once each year, in August, would show a profit on our ledger account the fourth year, if put in grass alone. Who will try the experiment on some portion of his field that is now so poor as to be worthless for mowing? I question if there be five farmers in New England who would hold out to fallow his ground three years, while there are probably hundreds who will agree with me that the theory is sound. Farmers are content to pay taxes on a large, smooth, worn-out, mowing field all their lives, but hesitate to try *long* experiments to find a better mode of farming.

C. S. WELD.

Olamon, Penobscot Co., Me., August 1, 1868.

REMARKS.—In England, Summer fallowing is much more generally practiced than in this country, and even there it is seldom applied to any soil but the heaviest clay land, and we understand that "green fallowing," that is, hoed crops, are rapidly gaining on the old plan of "bare-fallow." Land is seldom summer-fallowed more than one season. The object of both systems is to destroy the weeds and prepare the soil for the ensuing season's crop. To effect this, frequent cultivation is necessary. One ploughing in the season would hardly suffice to keep down the weeds. If our correspondent had illustrated his theory by some practical results of the benefit of a three years' fallow, he would have added greatly to the value of his communication.



TEXEL OR MOUTON FLANDRIN RAM.

Early in the seventeenth century the long-legged African or Guinea sheep were introduced into Europe by the Dutch, and distributed among the islands near the Texel and in Gronigen and Friesland, where they were crossed with the common sheep of the country, producing the animal known as the "Texel" or "Mouton Flandrin" breed of sheep. As long ago as 1763, a French writer in a work published by royal authority says "its walk is firm, its deportment is noble, its form well proportioned in all its parts, announcing a good constitution and a healthy temperament, and exempt from the maladies so common to other breeds. Its wool is white without spot; it is contented everywhere—it becomes a citizen of the place it inhabits." Youatt, in 1857, speaks of them as being of large size, and having considerable resemblance to the British or Irish long-wooled breeds, but more prolific, and producing long fine wool, which can be appropriated to valuable purposes by the manufacturer.

Our cut represents one of the animals of this breed imported and owned by Winthrop W. Chenery, Belmont, Mass., and which has taken prizes at the Fairs of the New England and other agricultural societies. He claims that the breed at the present time is a remarkably beautiful, compact, hardy and prolific race of animals, possessing quiet and contented dispositions, readily accommodating themselves to change of soil and climate, producing heavy fleeces of long and tolerably fine wool, mutton of superior quality, and lambs which, at four months of age, attain a weight of from seventy to eighty pounds.

Mr. Chenery's importation consisted of one ram and seven ewes when put on board ship, but on arriving at Boston, after a voyage of eighty-one days, the flock was found to have increased to seventeen animals, nine lambs having been produced; affording strong evidence of the good qualities of the ewes as nurses, as well as of the hardiness of the breed.

HOEING.

What are the Principles Involved in Hoeing, or Stirring the Soil, and How and When should it be Done?

ONE of the most important operations to be performed on the farm, is the thorough cultivation of the surface soil on all crops that require the use of the hoe. In England, and to some extent in parts of our own country, the "hoed crops" include wheat and other grains, when sowed in drills. *Drainage*, however, where necessary, must precede all other operations.

Perhaps the word *cultivation* would afford a better idea of what we are wishing to learn, than the word *hoeing*, as that word includes all the various means used to bring the surface into a fine and porous form.

Ploughing is the first step toward this cultivation, and renders all the subsequent labor comparatively easy. Ten or fifteen years ago, deep ploughing was supposed to be, not only judicious, but important; but according to the discussions to which we listened, during the recent session of the Massachusetts State Board of Agriculture, in Concord, *deep* ploughing is now considered injurious! A distinguished writer, and an eminently practical man, says the statement that the *deeper* and the *finer* the soil is rendered, the more productive it will become, is in every respect true, and which no single instance will contradict."

This deepening, however, must be *gradual*, and when so conducted, different layers being brought from time to time to atmospheric influences, what was at first a soil of four or five inches in depth, becomes one of ten or twelve, and is black, fine and porous, and in the condition to become richer and richer, under a fair treatment, every year.

This is the first step in a judicious cultivation; but is a rude and coarse one, and if stopped there on our soils, would scarcely repay the cost of the operation. We will give only a single illustration of the benefit of *deep* ploughing.

A good farmer had a considerable field which had been cultivated at ordinary depths. He laid it out in equal squares, and ploughed it at all depths from five to ten inches, on the different lands, and sowed oats evenly over the whole. The crop on the five-inch soil was very poor; on the six-inch rather better; on the seven-inch better still, and on the ten-inch soil it was as fine as ever grew; it had stiff straw and broad leaves, while the grain was also much better than on the remainder of the field.

The first duty of the farmer, then, in preparing his soil for seeds and crops, is to look at its *mechanical* condition. This is the basis and ground-work of all after labor; just what the bricks and mortar are to the mason, lumber to the carpenter, fire and iron to the blacksmith, knowledge of laws to the lawyer, of gospel to the minister, and of the nature of the human system, and of the drugs which he uses, to the physician.

He must look to this, because the soil is to hold the roots of his plants in position, and by its sponge-like action hold water for their use.

It must be in a condition to *absorb moisture from the atmosphere* to supply the demand of plants, and absorb heat from the sun's rays to make them grow.

It must supply them with a part of their food by admitting the air to circulate among their roots. The oxygen of the air will make the minerals in the soil available to their use.

Three things, then, are just as necessary to the farmer in preparing his soil to produce the most profitable crop, as timber and nails are necessary to the carpenter in building a house.

1. To make rain water pass *through* the soil, instead of being evaporated from the surface.

2. To make the soil deep and fine.

3. To make it capable of absorbing atmospheric fertilizers, by which it will become dark, fine and rich.

Such a soil will prevent drought.

Because when rain falls it will soak into the ground instead of running off. It permeates every part of the soil, and parts with the *heat*, *ammonia* and other fertilizing agents which it contains.

It absorbs the dews and the moisture contained in the atmosphere. The air is full of water in the form of vapor. More than 1300 gallons have been found to evaporate from a single acre in twelve hours. This air rests with a pressure of fifteen pounds to every

square inch of the surface of the field, and if the surface is porous it is continually receiving this vapor and passing it along among the particles of soil, *watering* and *manuring* them.

Watering them, because when it gets down where the soil is cooler than the vapor, the vapor is condensed into real water,—and *manuring* them, because the soil abstracts the *manures* which the air contains, such as ammonia, carbonic acid and oxygen, and keeps them in store for the use of the roots of plants as their needs require.

If water stands upon the land it is because the surface is hard and compact, and it gradually disappears by evaporation, which cools the soil and is of very great injury to its powers of producing crops. When the evaporation of water is rapidly going on by the assistance of sun and wind, a large quantity of heat is abstracted and the soil becomes cold and plants will not grow. When water is sprinkled on the floor it cools the room. When a patient with fever is bathed with water, it is to carry off the heat of the body, and standing water on the land operates upon the same principle. This is another reason why the surface should be kept fine and open. It ought to be remembered that when water assumes the form of vapor, it takes up 1723 times as much *heat* as it contained while a liquid.

Such, then, is the condition in which the soil should be, in order to receive the greatest benefit from the manures which we supply, and the atmospheric manures, which the heavens are kind enough to furnish to the soil, if we put it in order to receive them.

We have said that *ammonia*, *carbonic acid* and *oxygen* are atmospheric fertilizers. Let us see what they will do where the soil is prepared for them. Ammonia reaches the soil in two ways; from the air circulating through the soil, or by rains carried to the earth. It is the most important of all organic manures in the soil. Clayey, or peaty soils, retain it the best. Soils that are nearly pure sand, will allow it to evaporate immediately after a shower, and therefore need to be dressed with clay, peat, and a portion of charcoal dust. Plants do not, probably appropriate *ammonia* by their leaves.

Carbonic acid is received from the atmosphere both by the leaves and roots of plants. If there is caustic lime in the soil, it unites with it and makes it milder and finer. It is absorbed by the water in the soil, and gives it the power of dissolving many more substances than it would do without the carbonic acid.

Oxygen oxidizes or rusts some of the constituents of the soil, and prepares them for the uses of plants.

If there are acids in the soil, the oxygen will prepare some of the mineral matters in the soil to unite with and neutralize them.

The next agent is water, and may be considered an atmospheric manure, as it is received from the air in the form of rain or dew, and is charged with fertilizing substances.

Atmospheric manures cost nothing, and are of great value. In the course of nature they are supplied to the soil without the immediate attention of the farmer, but it is not beyond his power to manage them in such a manner as to arrest them in greater quantity.

But we hoe, also, to kill weeds, because they occupy the soil to the disadvantage of crops; because they exclude light and heat from cultivated plants, and thus interfere with their growth; because they take up mineral and other matters from the soil, thus depriving crops of their use,—and because, if allowed to perfect themselves, their hardy nature and persistent growth would occupy the land to the exclusion of all other plants.

By frequent *hoeing* or *stirring* of the soil we keep it in its best *chemical* condition, and that is the condition which will produce the most abundant and the most profitable crops.

The *how* and *when* this should be done, we will leave to others to say.

PROF. VILLE'S NEW SYSTEM.

Many farmers have little faith in science. The blunders and failures of those book-wise men who have attempted to analyze soils, to compound manures, and to direct the operations of the farm generally, are the groundwork of this scepticism. But are scientific men the only ones that blunder and fail? How has it been with the inventors and makers of agricultural implements? Did not the first horse-rakes—"man-killers" as they were called,—the first mowing machines, reapers, and many other labor-saving contrivances, now in general use, work their way to public favor through a long course of failures, and a still longer course of improvements? Science,

machinery and infants creep before they walk. The Atlantic telegraph is now in daily use, and the people of Boston have the news from London as soon as those who read the *Daily Times*. But how long is it since the Atlantic cable was a magnificent failure?

Prof. Liebig's mineral theory, so satisfactory in the crucible of the chemist, failed utterly when tested by the English farmer. But what of it? Does the failure of his compound prove the worthlessness of lime, potash, magnesia, ashes, phosphates, and the other ingredients of his "complete manure?" Certainly not. It simply shows he left a screw loose somewhere, which he or somebody else may tighten up. Failures should stimulate, not discourage. The good Book says that "it is better to go to the house of mourning than to the house of feasting." And how often do failures prove blessings, and successes turn out to be curses.

We have fallen into this train of thought with a copy of the second edition of the Address delivered before the Bedford, N. H., Farmers' Club, last winter, by John A. Riddle, Esq., of Manchester, which we have just closed, lying before us. In this address Mr. Riddle furnishes an account of a series of experiments made in France by Prof. Ville, a learned Frenchman, and of the composition of a manure based upon the results of these experiments. The professor claims that he arrived at his conclusions or facts by using the plant itself as the agent by which he analyzed the soil and the manures which were applied to it. But those who wish for further knowledge of a system by which an English writer claims that "the phantom of sterility is laid," will read this little pamphlet, which, in addition to the matter in the first edition, contains the views of Levi Bartlett, Esq., of Warner, N. H., on the subject, and also a statement by G. W. Wilson, of Providence, R. I., in relation to the improvement of light sandy soils.

Without expressing any opinion as to the value of Prof. Ville's "Complete Manure," we may say that we think every farmer will find Mr. Riddle's pamphlet both instructive and suggestive.

—Mr. Lewis, of Schuyler, N. Y., stated at a meeting of the Little Falls Farmers' Club that he had a meadow which by top dressing, produced twenty different kinds of grasses, and he would not have it ploughed for $100 per acre.

For the New England Farmer.

RURAL ARCHITECTURE.

BY A. B. B.

Much has been written on the subject of Rural Architure, and much more needs to be, to inspire a love for rural embellishment and a true taste for the beautiful. The ability to see and appreciate the objects of beauty which every where abound in the country, is a source of constant and pure enjoyment. The elements of beauty are cheap and abundant, while those of fashion and custom or art are expensive and often offensive.

The people of New England are more at fault on the subject of Rural Architecture than almost any other, and yet it is one which nearly affects our daily life, and in great measure, our characters and habits. Some may say they "don't care what they live in, if it is only comfortable and convenient." Comfort and convenience are indeed important, but this life does not consist, even mainly, in the abundance of material comforts and conveniences. The spirit that "don't care for looks" is a degrading and debasing one every where. From this comes the coarse vulgarity which degrades the country. A wholesome pride with intelligence and an ability to appreciate the beautiful around us, will place the country in advance of the city, in "all that exalts and embellishes civilized life."

In ninety-nine cases out of every hundred, the homes in the country are devoid of taste and attractiveness, not from lack of money expended, but from erroneous ideas of what is fit and proper. Every one of any pretensions to intelligence, knows that beauty, in dress, depends more upon harmony in colors and complexion, than the richness of the material or even the fashion. There is a beauty for the city, and a beauty for the country; what is fit and proper for the former, may be out of place in the latter. Many a man who builds a house in the country, takes his model from the city or village, which is as much out of place as the garments of a city gentleman would be on a farmer at work in the field, or a rich cashmere shawl over the square shoulders and tawdry dress of "foreign help," or the dress of a city belle on the faultless form of the country beauty, whose unadorned attractions surpass the power of art.

Let us draw two pictures,—one of the most prevalent style of farm houses as they are, and one such as they might be, and see which is the most attractive. The first is a "square-as-a-brick," upright, story-and-a-half or two story end-to-the-road building, clapboarded and painted a dazzling white, possibly with green blinds, and, if extra-stylish, with a piazza in front. From this, or, if this be wanting, from the front corners of the house, a picket fence, tall and white, extends to the road, the distance of a few yards, and along in front of the house, constituting the front

yard. In each corner of this, is perhaps a tree, or perhaps a row of firs in front, with their branches trimmed up three or four feet from the ground. The out-buildings have the same hard, square, matter-of-fact appearance. A puerile taste may see something to admire in the clear white of the house and the contrast of its green blinds, if it have any.

Now look at this bit of landscape by the road side. There comes sloping down a sunny hill-side on which, midway from the top, is a gnarled oak with spreading branches, and here and there are aged cedars and clumps of trees and shrubs unspoiled by the hand of art. At the foot of the hill is a level space; on the other side of this, is a rocky knoll of huge riven and splintered boulders, amid which grow trees, shrubs and clambering vines. In the rear is an open field, bounded by a brook, beyond which rises a wooded eminence, whose trees and shrubs form a most agreeable background, with almost every hue and shade of green in summer, and of crimson, orange and gold in autumn. Study the scene a few moments, and take in its simple, yet mysterious beauty. You may look and look again, and not tire of it. Familiarity only makes it the lovelier.

Now suppose we set a cottage, the simplest possible, to begin with, on the level space between the foot of the hill and the rocky knoll, with a steep, Gothic roof, for this is both picturesque and roomy. On this we will have neither clapboards nor paint, but cover with rough, solid boards, six or eight inches wide, matched and thoroughly nailed. Over the door we will make a rustic porch, with a seat on either side, and over each of the windows a rustic trellis for vines and running roses, and leave all for nature to give a color in harmony with its surroundings. A little back of the cottage, in the midst of that thicket of cedars and shrubs which will serve to protect it from the cold wintry blast, we will place a barn to correspond in style with the house, and near the rocky knoll, and within the shadow of the trees and vines, a rustic arbor. For a passage way from the road, for carriages, we will take out a part of the stone wall, and at each end of the gap put up a substantial unhewn post, and here hang a rustic gate, and directly in front of the cottage door, which may be from six to ten rods from the road, we will place a similar gate, but less in size, for foot travellers, and this completes the picture.

Let the two be compared and see which is the most attractive and beautiful. The first is expensive, the latter cheap. Is it objected that the cottage is too small for a *farm* house? It may be increased to any size and almost any picturesque form, and as the great expense of paint which, in the first case, is to be renewed every few years, is saved, the greater convenience may be afforded within. Another material which abounds every where in New England, may be used for building with greater durability and even more pleasing effect than boards. I mean the stones, as they are taken from the ground or surface,—cobble or rubble stones, if you please. An objection is made to these, that a house made of them is cold and damp, but if properly made, the walls of a stone house are as dry and pleasant as one of wood.

Randolph, Mass., 1868.

REMARKS.—We cannot agree with our correspondent in some of his ideas of taste and beauty. We confess to a liking for his "square-as-a-brick," "clapboarded," "dazzling white" building, though we might prefer a light cream color, with "green blinds, a piazza and shade trees," and a dislike of his fanciful cottage, with "steep Gothic roof," "covered with rough solid boards and left without paint for nature to color in harmony with its surroundings." Think of sleeping in a room immediately under such a "picturesque" roof after the fierce rays of a July sun have rested all day on its roomy surface! We have tried it so often that an involuntary "Good Lord, deliver us" springs up at the very sight or mention of a steep, picturesque and roomy Gothic roof. And then as to color, we feel like moving a vote of thanks to the proprietors of the old South Church every time we go up or down Washington Street, for the lighter shade and more cheerful look which a new coat of paint has given to that venerable structure. We rejoice also to see in every direction unmistakable evidence that the taste for the dark and dismal in the color of dwellings is passing away.

For the New England Farmer.

LIGHTNING RODS AND FUMIGATOR.

Do you know of any facts proving lightning rods of any value? If you do not, is there no way of compiling statistics having a look one way or the other, for, or against them?

A third and, it is to be hoped, the last gang of builders of these rods, is now crawling over our hills, and through our valleys, and getting the usual amount of money from the farmers, who are in doubt about the whole subject, and too easily victimized by the artful conductor of these speculations.

Some ten years ago, the whole country, to the farthest west, was canvassed and bled by those carrying iron rods and insulators. Three or four years ago, the thing was repeated with twisted copper and no insulators.

Now they have got a new twist, and perhaps have twisted both materials together, call-

ing their machinery galvano-electric conductors, or magnetics. Now all this has ever looked like humbug! If it is not, let the people get some facts, on which to found an opinion. Are there a thousand buildings in a country with rods, pair them off with a thousand with none. Let No. 1, with a conductor be paired with the nearest building to it with none, and continue till the odd and even numbers count up enough to give us a little history of lightning work for a few years, in the rural districts.

Extremes are said to meet. They sometimes follow each other. The lightning rod man in his covered carriage, was followed by the "Fumigator" man in his top buggy. I am so fortunate as to live on the summit of a high hill; consequently many a weary horse and hungry traveller, crave rest and refreshment when they get to my poor tip-top house. The fumigator, I had got in the spring from one of these benevolent patent-pilgrims for a dinner and sheep's pelt. The sheep breeders of Vermont had "examined and approved." Ah, yes! But these men don't breed the things that eat up sheep. By my own negligence, I had a few sheep with ticks. I applied the fumigator and it killed every tick that got smoked; and I went over my lamb in some twenty or twenty-five minutes, with a man to hold it. Better expend three dollars to clear ticks from the flock, than pay that for the machine and break your back smoking them out.

But the wonderful instrument that gets itself pictured and painted in so many papers, is death on mosquitoes. Well, I charged upon them the other evening, very much as Uncle Toby did on his sod forts. I marched and counter-marched through the house. The smoke of the attack waxed thick. The mosquitoes went up, and all the females of the family went to bed narcotized, swooning with tobacco *tremens*. It is true, a little sugar on live coals will do just as well, but there is no patent on that method.

The virtues of the fumigator are too numerous to mention. Only one more can be named here. It is death on bedbugs. A near neighbor wished to try it on them. Although according to the bond I am not allowed to lend or use the instrument off my own premises, yet I dared to break it just this one time. To make assurance doubly sure, Miss Nabor got one of the enemy prisoner and set him up as a target. She first assaulted him in rear. Instead of surrendering, he at once commenced a masterly retreat. She then made a flank movement, and fired both on his right and left, but with no better success. Finally, our valiant friend filed to the front and poured discharges point blank into the enemy's face and eyes. It was all in vain, so far as Mr. Bedbug was concerned. But to the fumigatress by this time the world and the things therein contained, began to gyrate very rapidly, and she had only time to give the villain the coup de grace with her shoe, before giving herself into the hands of her friends, "smoked out."

Mercury about 86 degrees above, and the summer has made up already for spring's delinquencies.

C. N. ANDREWS.

Chelsea, Vt., July 4, 1868..

REV. CHAUNCEY E. GOODRICH.

The name of this gentleman has become so familiar to the readers of agricultural papers and especially to those who cultivate any of the many varieties which he originated, that the following tribute to his memory by Alex. Hyde, Esq., will prove generally interesting. For some sixteen years Mr. Goodrich studied the subject carefully, and has left us a rich legacy in the results of his investigations and experiments. We copy from an article in the *American Journal of Horticulture*:—

From some constitutional idiosyncrasy, Mr. Goodrich was unable to eat potatoes himself; which fact makes his persevering labors in studying the habits of the plant, and originating new varieties, all the more remarkable. As early as 1846, his attention was called to the potato-disease. The result of his investigations was the conclusion, that the causes of the disease of this semi-tropical plant were the changes and intensities of the weather, the character of the soil, and the artificial mode of culture. The constitution of the potato thus became impaired, and transmitted its want of vigor to succeeding generations, each becoming more and more enfeebled. In 1848, he began importing from South America, the original home of the potato, some of the native tubers, and, from the seed of these, began reproducing new varieties. In all, he originated some fifteen thousand seedlings. These he divided into seventy-four distinct families. After four or five years' trial of the different seedlings, he rejected those whose health, yield, and habits he did not like. Mr. G. died in the midst of his experiments, but not until he had established in public favor the Garnet Chili, Early Goodrich, Calico, Gleason, and Harrison varieties, which now stand at the head of the list with all well-posted and successful cultivators. These varieties can be planted with the expectation, that, under ordinary circumstances, they will escape disease, and yield remunerative crops of excellent quality. They will doubtless degenerate in the course of time, and an occasional reproduction from seed of a healthy parentage will be necessary. The degeneracy may be retarded, if not prevented, by a judicious selection of soil, and a cultivation in accordance with the principles of vegetable pathology.

We notice that some of our horticultural writers have suggested the idea of extending to the labors, or rather productions, of such men as Mr. Goodrich the protection afforded to authors by the law of copy-right, and to inventors by the patent law, and that very plausible arguments are advanced for such a provision. But as yet we think that farmers are hardly prepared for "patent potatoes,"

patent grapes, strawberries, wheat, rye, barley, oats, &c., or for patent horses, cattle, sheep, pigs, and poultry. But the question is already before the people, and very likely Congress will be called upon to take some action on the subject.

DOES FARMING PAY?

Having seen a number of inquiries in relation to the above subject, I take the liberty to give you an item that will show what a young man in this place has done.

He was born and brought up on a farm, and learned the trade from his father, who was called a thorough going farmer. This man started for himself in 1861, with $275 in money, which was all he was worth in the world. He bought thirty-six acres of old pasture land for $1025; bought his team and went to work.

He built a good substantial house and barn, with cellar under the whole, 32 by fifty feet, for the making and storing of manure. His neighbors said—"Do not make a cellar; if you do, you will lose all your stock with the cattle disease, and it will ruin the neighborhood as well as yourself." But he heeded not their advice, and his cellar has paid better than any other investment on his farm, unless it is underdrains of stone, which have been put in to the amout of over one mile. Neighbors shook their heads and said—"He will starve on that place;" but, by perseverance and plenty of work, he has made great improvements, and has also lived on the place.

He is a bachelor, and, of course, hires his help in the house as well as out doors when necessary, and does manage to make both ends meet. He keeps an account of all his transactions, and would be able to tell, if asked, what it had cost him to make a pound of pork in more than one instance; also, if there is any profit in the raising of poultry in large or small lots. An inventory is taken at the close of each year, and then he can tell at once what the profits and expenses have been for the past year, and this will help to form plans for next year with better results than if it were all mere guess work.

His farm was rented one year, while he enlisted in the army, but it was no improvement to the farm, or his pocket either, for his health was so poor that he was not able to do any work for more than a year after his return.

The past season he refused an offer of $4200 for his farm and his out lands (which have been bought by piecemeal since his first purchase of the farm,) will pay all his debts, and the personal property will bring at auction from $1200 to $1500 more, making over $5000 for five years' work, which I think is doing very well on a farm in this country. Now if one man can do this on a farm without a wife to help him over the rough road of life, and with all the drawbacks that a young man without money has to encounter, why cannot another do the same? It requires tact, energy, and industry to achieve success on a farm as well as in other vocations in life.—*D. T., West Springfield, Mass., in Country Gent.*

ASSORTING FRUIT.

Dr. Claggett of St. Louis said, "I wish I could impress upon fruit-growers the importance and profit of assorting fruit. Fruit will not only bring better prices if assorted, but depreciation of prices will be prevented. Too few shippers assort their fruit; such as do, get from one-third to one-half more for it than those who do not do so. Full one-third of the fruit found in packages had better have been given to the pigs. The market is overrun with packages of inferior fruit. We who are dealers have to assort it. If one-third of the fruit sent to this market were left at home, the other two-thirds would bring more money than the whole does now. It is every man's interest to leave imperfect fruit at home; if he does not, the buyer has to throw fully one-third of it away. If a dealer knows a shipper has a reputation for assorting his fruit, he can recommend his packages confidently without examination; but, so far as nine-tenths of the packages received from shippers are concerned, dealers know nothing about them that will warrant them in asserting the excellence of the fruit to a customer until it has been examined. I wish every shipper knew the value to him of a good reputation,—of a reputation that will sell fruit-packages bearing his brand at the highest market-price, without examination. Every fruit-grower should aim to get such a reputation."—*Am. Pomological Soc.*

THE CURRANT WORM.

About the middle of May they begin to appear on the lower leaves near the ground, and what afterward proves to be many hundreds may be found on a single leaf. They travel slowly until they attain considerable size, which gives ample time to destroy them before they have done much damage. By the 1st of June small black skins, with the worm's head attached, may be seen on the ends of the branches, and in a very few days no worms are to be seen. I have seen hundreds of worms on the top of a bush in the evening, and in the morning each one had left behind it its skin, and disappeared. Whether in one night the larva changes into a fly, unlike other insects, or whether it goes through the regular transforming process of a chrysalis' life in a cocoon, in the earth beneath the bush, I have not ascertained, but intend to remove a bush, sift the soil, and learn the facts, if possible. I placed three sizes of the worms, from one-third to fully grown, in a glass vessel, and put in with them some currant leaves:

each of the sizes immediately concealed themselves at the bottom of the glass under a cocoon. This leads me to think that they enter the earth as above conjectured; but why they should leave their old suits behind them on the ends of the branches seems a mystery. It is about two weeks since the larvæ were placed in the vessel, and it is now swarming with beautiful yellow flies, in size and shape somewhat similar to the house-fly, a little more slender, with large abdomen, and prepared to deposit an innumerable number of eggs, which they are now fastening upon leaves put in the glass for this purpose. We may therefore suppose that the eggs of the new installment are already upon the foliage, and I am watching daily for their re-appearance, which at the farthest will not be longer than a week, as they have been gone from the bushes two weeks; thus they appear and disappear three times during the season, and each time they come in greater numbers.

The bushes should not be allowed to touch each other; if they do, the larvæ will continue to eat and grow until they get to be an inch long. They do not in any case leave one bush and creep on the ground to another, but always leave when they reach the top, not being particular about their size or age, if the branches of another bush do not intermingle. I have had many bushes uninjured, with others standing on either side entirely defoliated, when they did not touch each other.—*A. J. Caywood, in New York Horticulturist.*

CHEMISTRY OF HAY MAKING.

The succulent grasses that clothe our fields with verdure are very insignificant vegetable growths in contrast with the forest trees whose huge trunks rise up from the hillside and the plain, and darken, with their dense foliage, unnumbered acres of our fertile lands. In the tiny stalk and leaves of the timothy, clover, red-top, &c., there are rich juices circulating, which have been drawn from the breast of mother earth. These juices are the very pabulum of life, and from them, indirectly, we draw our sustenance. If we subject to chemical analysis these grasses, we shall find them to contain all the essential elements of animal growth. But it is not our intention to follow this line of thought, however pleasing or attractive it may be. We wish to make a few brief observations upon the chemistry of curing hay.

Curing hay is, chemically speaking, a distillatory or evaporative process. It is doing with succulent vegetable substances, what the salt-maker does with his saline waters, or the sugar-maker with his saccharine juices. The object is to drive off surplus waters, which hold the valuable principles in solution; to get rid of worthless and interfering substances, and retain all the desirable ones. The sugar-maker may apply too intense heat or direct flame to his evaporating pans, and burn or spoil his products; so the farmer may heat his hay too much in the blazing rays of the sun, and greatly injure the rich nutrient principles upon which its value depends. Certain it is, we cannot control all the conditions upon which the production of perfectly cured hay depends; but we can control them much more decidedly than we do. A ton of well-cured or properly dried hay is worth more in the mow than two tons of that which is cut at an improper time and cured in an imperfect manner.

Grass is not generally cut and cured early enough in the season. The sugar, the gluten, and starch, are in the best condition for preserving, before the ripening of the seed commences The great end and aim of plant life is to reproduce itself,—to perfect its seed. The periods of inflorescence and seed-bearing are attended with a large expenditure of costly material. The development of the flower to a blade of timothy, is a very different affair to that of one of the green leaves. The former contributes nothing to the general maintenance of the plant; the latter is mouth, stomach, and lung. Just previous to flowering, the vegetative power is most active, and large quantities of starch are being stored up ready for use when the pressing occasion arrives to form the seed. A tremendous struggle takes place in the plant, when the nutritive principle is dissolved by the aid of diastase, and transferred to the seed. As soon as it is over, signs of exhaustion appear, and the plant dies. The time to cut grass is before this culminating point is reached, when the nutritive principle pervades every part of the stalk and leaf.

Grass is generally dried too much. The ligneous part becomes hard and tough, and animals do not like it any better than we like over-baked bread. The nutritive portions are not so readily eliminated, and the waste is much greater in passing through the assimilating organs. It is not necessary to dry hay so thoroughly, in order to preserve it from putrefactive change in the mow. If the weather is clear and warm, it may safely be stored the same day it is cut, provided it is not cut in the early morning, while loaded with dew. If grass could be mown after the dew is gone, and spread upon a dry parcel of ground, four or five hours' exposure to sun and air will fit it for the barn. All moisture proceeding from dew or rain must be removed. Hay seldom or never spoils from fermentation of its own juices, unless the conditions under which it is stored are extremely unfavorable. The process of drying or curing in the mow proceeds slowly and advantageously if but a part of the natural moisture is evaporated in the open air. A pound of hay well dried in the mow, is much better than an equal amount dried in the fierce rays of the sun.

If farmers will observe more carefully, and learn a few simple facts in regard to the important labor of hay-making, they can secure

the crop more expeditiously, at less expense, and obtain it of far better quality. Let them *venture* more. Don't be afraid of spoiling hay by storing, if partially cured, and not wet from rain or dew. These suggestions are drawn from experience, and are worthy of regard.—*Dr. Nichols' Jour. of Chemistry.*

DUTCH BULBS.

The Dutch have long been celebrated for their cultivation of bulbous roots, especially tulips and hyacinths; and from March till June the district around Haarlem is carpeted with a succession of beautiful flowers, beginning with crocuses, and ending with ranunculi. The sandy soil of the district, which is derived from the dunes, is highly favorable to bulb-culture; indeed, some of the flowers grow on the sand-hill; and hundreds of acres of valuable land are, in consequence, devoted to flower-farming. In the proper season, as one drives along the roads in the neighborhood of Haarlem, he is surrounded on all sides by plantations of hyacinths and tulips in full bloom, forming a mass of color exceedingly varied and rich, while the scent exhaled is most delicious. Every house and villa has its bulb-garden; and for long distances the eye can feast on glorious masses of richly-hued flowers. In one of the *bloemestries*, there is a bed of tulips two hundred yards in length, which, in the spring-time, is resplendent with gorgeous color; and, in order to the better setting of them off, they are framed in a border of crown imperial lilies, and bridged over for effect every here and there with a wooden arch. It is a great pity that such a lovely flower as the tulip is scentless; Nature must have exhausted herself in the coloring. The hyacinth, however, exhales a delicate perfume, especially about midnight; and, at Haarlem, great beds of these favorite flowers, covered over with roofs of canvas to protect them from extreme heat or rain, may be seen, so arranged as to present the most vivid contrasts, or exhibit the finest harmonies of color.—*Once a Week.*

CULTIVATION BY HOGS.

From a report in the *Wisconsin Farmer* of a late discussion by the Oswego Farmers' Club, we clip the following:—

Capt. Barnes—I never yet wired or cut a hog's snout. Some ravenous specimens may require it, but by keeping them in the right place, I could always make their digging profitable. When a boy in New England, I knew a man who had a nice smooth bit of meadow, which he could not plough, as the ground was full of stone. It had had a coat of soil washed on from higher land, the points of stone that interfered with the scythe had been broken off, and it was often top-dressed with chips, dirt and ashes. Well, there came two or three dry season, the patch became sod bound, and the white grubs got into it, and it did not bear five hundred of hay to the acre. After haying the old man turned his hogs into it and they rooted it completely over. Almost every day some one would stop in the road and shout, "Your hogs are rooting your lower meadow all up." "Let 'em root," the old man would answer. In the fall he harrowed it well, and sowed on grass and clover, rolled as soon as frost was out in spring, and his meadow was as good as ever.

Dea. Osgood—And I have seen pastures that could not be ploughed, kept in good order by hogs. When stony pastures get full of brake, they dig after the brake roots, and a little grass seed sown on is all that is needed. Then in low, moist pastures they dig for angle worms, and keep the sod loose, and prevent moss and brake coming in. They are the destroyers of all worms that harbor in the ground. But what will you do in our tame grass pastures? They dig after clover roots, as well as worms and morning glory, and tear the ground all up.

Capt. Barnes—I give them a turn at my pasture, before I break it up; they take out the clover roots, and white grubs, and mellow the land. But one year I failed to break up a piece after it had been well rooted over, and it bore more feed the next summer than any other I pastured. I would rather turn hogs on my meadows in the fall, than cattle. It is a most wasteful and destructive practice to feed meadow short in the fall, as some men do.

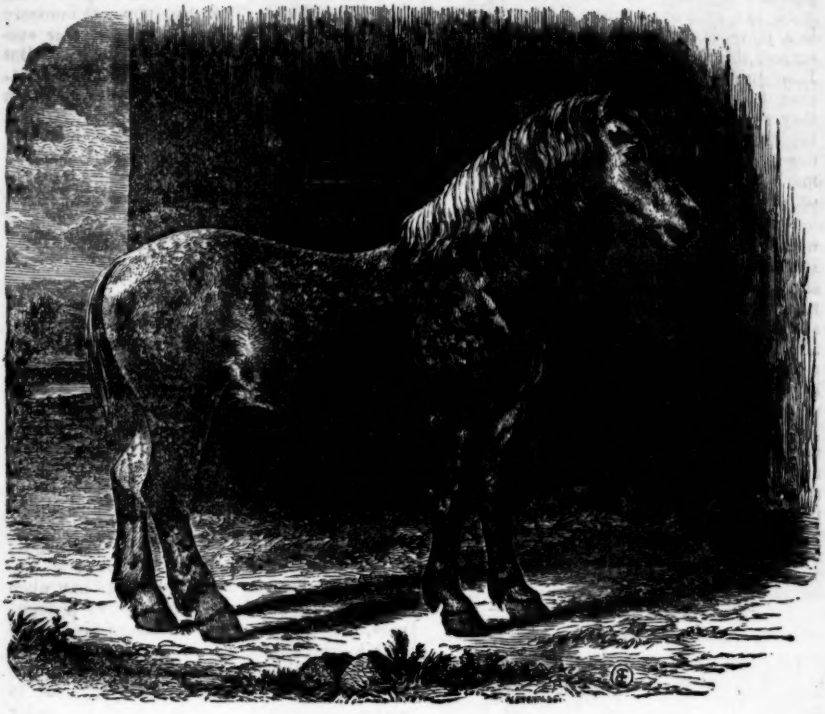
GREASING WAGONS.

But few people are aware that they do wagons and carriages more injury by greasing too plentifully than in any other way. A well-made wheel will endure common wear from ten to twenty-five years, if care is taken to use the right kind and proper amount of grease; but if this matter is not attended to, they will be used up in five or six years. Lard should never be used on a wagon, for it will penetrate the hub and work its way out around the tenons of the spokes, and spoil the wheel. Tallow is the best lubricator for wood axle-trees, and castor oil for iron.

Just grease enough should be applied to the spindle of a wagon to give it a light coating; this is better than more, for the surplus put on will work out at the ends, and be forced by the shoulder-bands and nut-washers into the hub around the outside of the boxes.

To oil an iron axle-tree, first wipe the spindle clean with a cloth wet with spirits of turpentine, and then apply a few drops of castor oil near the shoulder and end. One teaspoonful is sufficient for the whole.—*Rural American.*

—A bushel of redtop seed weighs about ten pounds.



THE PERCHERON HORSE "ORLEANS."

The above is a portrait of one of the two stallions which were imported by the Massachusetts Society for Promoting Agriculture in July, 1864, in connection with three mares of the same race. "Orleans" is of a reddish roan color, and at six years of age stood 16 hands high and weighed 1450 pounds, and is considered a perfect type of the Percheron Horse. For the use of the cut we are indebted to the courtesy of Chas. L. Flint, Esq., Secretary of the Massachusetts Board of Agriculture.

For the New England Farmer.

NEW PLAN FOR TOP-DRESSING.

Last fall I tried an experiment with which I am so well pleased that I take my pen in hand to write a short article for your valuable paper.

For several years past I have been thinking about the amount of manure lost every year by allowing my sheep to lie in the pasture nights. My pasture has been used for over thirty years, and as the sheep occupy the same resting places nearly every night, these spots have become like a barn yard, and I determined to contrive some plan to distribute these droppings over my mowing lot.

Commencing as soon as I got through haying,—and I think no man ought to do any haying after July,—I made a movable pen by nailing three boards, fourteen feet in length to three pieces of two-inch scantling, projecting at the bottom for stakes. For one hundred and ten sheep, I found it necessary to use two lengths of these boards for each side of my pen, and one length for each end. I used an iron bar to make the holes for the stakes, and fastened the tops with straps. I think a lighter and more convenient fence might be made, but as mine is, one man will remove the panels, one at a time, and set them in a new place in twenty minutes.

By keeping a small trough or two in the pen, and putting into them a little salt or corn, the sheep will learn in three days to run for the pen as soon as let out of the pasture.

Last fall they were yarded on the poorest part of my mowing. The first night they were put on a moss grown knoll. One night in a place is sufficient. The effect, as observed this tenth day of June, is wonderful. I am sure there is threefold more grass wherever the sheep were thus yarded than where they were not; it already being knee high and beginning to head out. Even on the old mossy knoll, the grass is a sight to behold, marking by its vigorous growth the exact space on which they were yarded.

Some may object that there is too much work and bother in this plan of top-dressing. But brother farmers is there not hard work in shovelling over, carting, and spreading manure, to say nothing of ploughing up the tough sward? And if we can make the sheep save all this labor, may we not afford to do a little tinkering for them? It is easier than shovelling manure, and besides I save much of the strength of the manure that is lost at the barn. If we finish up our haying in July, we have three months or more to follow this business, and I really believe that with a large farm, a large flock of sheep and conveniences for its prosecution, we can greatly improve our old mowings, and consequently the profits of farming. H. H. C.

Braintree, Vt., June 10, 1868.

WHAT FARMING IS TO BE.

It is evident to any thoughtful man that we have entered a new epoch in American agriculture. Our population increases rapidly, and the production of food does not keep pace with it. "I have just sold a two-year-old heifer for $60," said an old farmer. "I had no idea of selling her. She had run in the yard all winter, and I never fed her a handful of grain, but a butcher saw her and offered me $60 for her." He thought it a great price. I told him that a well-bred animal, with liberal feeding could easily be made worth $100 at two years old. It seems difficult for an old farmer to realize the changed condition of things. He is apt to think that a thing which did not pay when the country was new will not pay now. "Fifteen dollars for a calf!" exclaimed a city friend the other day. "I thought calves were not worth more than a dollar apiece. My father used to sell them for that. In those days agriculture was not appreciated. How could it be, with calves a dollar apiece and wheat seventy-five cents a bushel? We have now high prices—perhaps a little too high—but they were necessary to place agriculture on its true foundation. Farming will now be as respectable in fact as it has hitherto been in theory. Let young farmers take a calm view of the situation. We are going to have a very different system of farming from what we have had.

Mark you, I am not finding fault with the old farmers. No man can respect them more than I do. They have done an immense amount of work and done it well. Their system was the best in the circumstances. But the "stump period" has passed, and is followed by the mowing machine, with the steam plow appearing in the distance. Virginia fences and bad roads are still found, but they, too, will soon belong to the past. Underdraining will improve the latter, and the high price of wood will banish the former. Labor is more abundant, and wages are paid in wheat less than formerly. The district school has a prodigious influence. Now let our young farmers bestir themselves. They must be "men of thought and men of action." In the older settled sections we have blacksmiths, and wheelwrights, and carpenters, and bricklayers, and saddlers, at no great distance, and it is no longer necessary for a farmer to be a "Jack of all Trades." His business is to cultivate the land; to look well to the state of his flocks and his herds; to attend to the thousand little details of his establishment. He must have a trained mind and skilful hands—must be able to work himself and direct others. He must plan work for all kinds of weather, and not do in summer what should be done in winter—should not work in the barn when the sun shines and make hay when it rains. He requires great energy, promptness, and perseverance. Much of his success will depend on getting his land in good order and sowing in proper season, and it requires no little forethought and good judgment to accomplish even this. It is a good deal easier to "work" than it is to think. The best general rule for a young farmer's guidance is to do first what he likes to do least.

Many people seem to think that it is the easiest thing in the world to manage a farm; while in point of fact it requires far more brains to be a first-rate farmer than to be a second-rate lawyer. The man who thinks that *because* he has studied agricultural chemistry he will make a good farmer, is a goose. If he has the necessary qualities for success as a farmer, and likes the business, he will probably succeed. If he has not, all the chemistry in the world will not enable him to "make farming pay." Chemistry will not teach him how to buy and how to sell. It will not get him out of bed in a morning. It will teach him how milk is formed, and why it turns sour, but it will not secure regular feeding and steady milking. It will teach him the importance of having *boiling* water to scald the milk-pans, but it will not enable him to have everything ready just when it is wanted. If he would make a good farmer without chemistry, a scientific education will enable him to make a still better and more successful farmer; but if he would not succeed in some degree without it, chemistry will not enable him to make farming pay.—*J. Harris, in Am. Ag.*

EXTRACTS AND REPLIES.

BOOKS.

With me, as with many of your correspondents, "Extracts and Replies" are usually looked over first; and scarcely any one, unless his attention has incidentally been called to the fact, is aware of the amount of varied, practical and speculative information contained in this particular column in a year.

Next in order, and sometimes first, with me the book list and notices are sought, and in those publications which have no Extracts and Replies department, the book list and reviews come first. But the point which is sought at this time is:—

Why are there no more notices of agricultural books, papers, periodicals and works which incidentally belong to this class in our publications specially devoted to agriculture?

Beginning about the middle of November, it is a continuous stream of holiday and juvenile books till fully up to February, in nearly all kinds of publications you may take up, and oftentimes, with so few other book notices, that one fairly dreads to look them over.

These, and such books, are good in their appropriate place, no doubt, but in agricultural publications it seems as though more prominence should be given to its own special and kindred literature.

Give such works as the NEW ENGLAND FARMER Monthly, bound, *Country Gentleman*, *American Agriculturist*, and many others not heard from, once a year, appreciative notices without overlooking the many valuable books which belong with them, and get them on to the table of the farmer, in lieu of so much trash as is sent broad-cast through the kindly notices and reviews of our agricultural press. Just compare our agricultural books and annuals with—well, I don't care—with the original Mother Goose Melodies, hifalutin boys and girls' books, novels, &c., and see if you do not say, with me, that agricultural papers are giving an undue prominence to the latter.

One of our religious papers, in speaking of one of the best of the juvenile class of books, very truly says: "Its style is somewhat inflated, and it has a general tone of boyish exaggeration throughout, which we suppose was the intention of the author, as he wrote it for boys. This, however, we cannot approve; for we think the youth of America pick up these ideas easily enough without having them put before them as examples in books intended for their use."

More is already written than was intended, and yet the subject is just beginning to well up. All probably have heard of the painter who wrote the name of the animal he had drawn under the picture, lest it should be mistaken for some other creature, so lest the reader may not divine the purport of this article, I will inform him that it was written for the good of agriculture and agricultural literature.

Farmington, Me., 1868. O. W. TRUE.

REMARKS.—In case of the painter alluded to, we suppose there was danger that the picture under which he wrote "horse" might otherwise have been mistaken for a cow. We don't think there was any danger of friend True's "drawing" being thus misinterpreted. We regret that he did not dip his bucket a little deeper into the "well" of his subject. As it is, however, he has given us a word in season,—a word that parents, as well as the conductors of agricultural papers, may well heed. The mind as well as the body craves food; but are stimulants less dangerous to the one than to the other?

Our correspondent probably knows why white sheep eat more hay than black ones. And a glance at any book-store or publisher's catalogue must suggest the reason why notices of new books on agriculture are less frequent than of those on miscellaneous subjects—including histories, biographies, travels, juveniles, fiction, &c. Still the increase of agricultural publications has been very great during a few years past, while the improvement in quality is even greater than in number.

SUMMER FALLOW.

I have a piece of run grass land, but no manure. I think of trying a little "newspaper farming" on it, by way of ploughing, summer fallowing, and seeding down to clover in the fall, to be turned under next season for the improvement of the land. Now I would like your opinion as to the best way of doing it, and whether you think it would pay. T. S. F.

Felchville, Vt., June 16, 1868.

REMARKS.—We invite the opinion of the farmers in New England on this subject. In England and in the Western wheat growing States, clover is more generally used and more highly valued as a fertilizer than it is in this section. It seems to be especially valuable to precede wheat in a course of rotation. We understand that our correspondent proposes to keep his land in grass. And the question is, can a crop of clover be economically grown and turned under as a fertilizer of grass land?

The *Country Gentleman* gives the following account of the way in which clover is used at the nurseries in Geneva, N. Y., as a substitute for manure in preparing the soil for the growth of trees.

"The comparatively small quantity of manure furnished by the village rendered the mode of enriching by clover an absolute necessity, and the excellent, healthy and vigorous growth of the young trees proved its great value. The crop is ploughed under when in full blossom; if done sooner, there is too much succulence and not enough substance; if later, the stems have become too hard and woody, and do not become so well pulverized in decay, nor diffused through the particles of the soil. Before ploughing, the crop is well harrowed, which not only lays the plants flat on the ground, but draws them in the same direction as the course of the plough, allowing the sod to carry its own crest of plants when inverted. A log chain attached to the forward part of the plough, and to the right handle, and hanging in a loose loop between these points, and dragging on the ground, assists in completely turning under the otherwise straggling plants. It is thought best not to turn them under with a very deep furrow; and rolling the furrows flat immediately afterwards, prevents the drying of the leaves and stems, and hastens decay and intermixture. As young trees require a good depth of soil, the sod is again inverted with a larger plough, or to a greater depth, after the lapse of several weeks.

Clover is generally too thinly seeded. There is

no expenditure more economical than the purchase of an abundant supply of clover seed. One peck per acre is not too much—we have found a half bushel to yield an increase worth much more than the additional cost of the seed. But a heavy seeding alone will not answer the purpose, unless the soil is in a proper condition."

YARDING SHEEP ON FIELDS AND PASTURES.

I notice in your issue of July 11th, an article headed "New Plan for Top Dressing," by "H. H. C.," Braintree, Vt. The course he recommends must result in enriching his fields at the expense of his pasture. Now, my dear sir, I am induced to pen this article that you, being a sentinel on the watch-tower of agriculture, may warn your thousands of subscribers against adopting his plan. Our pastures grow poor full fast enough, without taking from them that which belongs to them and giving it to other portions of the farm. The plan of "H. H. C." for a pen or yard is a good one, so far as that goes. But I think his location of it is extremely bad. I would suggest that he and all other farmers make a portable pen in their pastures, and never at night remove from it any of the stock kept there, except those you are absolutely obliged to. We may travel over the New England States and not find one old pasture in a hundred that will keep one-fourth the stock it did fifty years ago, owing to the system of robbery that has been carried on. Let it be stopped as far as possible, and at once, or soon we shall have no pasturing.

Many farmers may say, we cannot keep our tillage up unless we yard at night. This is a mistake. There are very many other ways to do this. The cheapest, easiest and best is my method advertised in your paper. The reason is my combination of chemicals is such that they grasp the fertilizing properties of the manure and hold it for vegetation, not allowing it to escape in the air. The chemicals are all fertilizers, and the combination increases their properties four-fold.

JOSIAH CLARK.

Manchester, N. H., July 13, 1868.

REMARKS.—What our correspondent says of the condition of our pastures will not be disputed by the farmers of New England. But we have no knowledge of his "combination of chemicals," except that furnished by his advertisement and by the statements of individuals and societies in his neighborhood, who have tested it.

SPECIAL FERTILIZERS FOR SEEDING DOWN.

GENTLEMEN:—I write to the FARMER for advice. All farmers, by occupation, are brothers, and I hope are willing to impart information to others. I have a piece of meadow in grass, about two acres, which has so run out that I want to plough it and seed it down. I have top-dressed it every year with compost manure, but still it needs seeding. Now the question is, what fertilizer shall I use? Barnyard manure is out of the question. I have a bed of peat muck, which I use quite extensively, combining it with other fertilizers. Wood ashes is good, but cannot be obtained in large quantities. Fish guano is good, but it is difficult to be got this time of year. What say you to the ammoniated Pacific guano? I want something that will enrich as well as stimulate. Will the FARMER or some of its valuable correspondents come to my help.

I wish to ask your correspondent, Mr. Harmon Northrop, if the revolving horse rake on wheels, will rake clean where the hay is very thin, and also what is the price. I wish advertisers would give the price of their machines when they so highly recommend them. I went to a neighboring town to see Chandler's horse hoe. I found the man and talked with him about it. I had got to go 100 rods or more to see it, but when he told me the price was $50, I said I did not want to see it.

ELIJAH GUNN.

Montague, Mass., July 13, 1868.

REMARKS.—How many such questions as that of our correspondent in relation to his meadow we could answer if we only knew of some cheap available substitute for barnyard manure! And how we could make our own farm shine, and how we could fill up the guant old "weasel-skin," if we possessed that knowledge! The scientific man, as well as the practical farmer, is seeking for such a substitute in the minerals of the earth and the gases of the air. The isles of the sea are explored, the bowels of the earth are mined, the crucible of the chemist is consulted,—but "what say you" to this or that panacea for the woful "goneness" that our soils complain of, is a hard question to put to the editors of the FARMER, and they hand it over to the "brotherhood." But first "gather up the fragments that nothing be lost." Are your cow-yards and pig-pens furnished with dry muck and other absorbents? Are all the "Pacific," "ammoniated" solids and liquids from the sink-spout and elsewhere made to leaven as large a lump as possible of your peat muck? If your meadow has been top-dressed every year, a very little manure harrowed in with the "seeding down" may, with the aid of the decomposing sod beneath, ensure a good "catch" and a good growth of grass. We have known a great improvement in the crop where no manure was used. But it is better to use a little than none, as a very small quantity seems to encourage wonderfully the the young grass in its first attempts to grow.

As Mr. Northrop only expressed his opinion of the rake alluded to, we think it incumbent on its manufacturers to advertise the public as to its cost and efficiency.

RECLAIMING A CRANBERRY MEADOW.

Mr. EDITOR:—I have two or three acres of bog meadow which are valuable as a cranberry meadow, and by the side of it I have much land of the same kind well adapted to cranberry culture—with the exception that it is covered with brush. How can I get rid of the brush? Some of my neighbors think that, after mowing and burning the bushes, the meadow must be dug over with a bog hoe in order to kill the bushes, as the surface is too soft and the mud too deep to bear up oxen and plough. I have been thinking of the following process: First mow the bushes close to the ground, in August, and as they get dry burn them. As the bushes are quite a heavy growth they will make a very hot fire, which will kill all the stubs to the surface of the ground; then as there is plenty of sand near by, and the meadow is flowed during winter, cover the surface with six or eight inches of sand.

My opinion may not be correct, but it appears to me that eight inches of sand pressed down with a roller would smother or prevent all sprouts from coming to the surface; admitting, however, that they do sprout and penetrate the surface, could it

not be covered with old hay or leaves from the forest, or shavings and be burnt over in August, annually, until the sprouts are all dead; and then set out the cranberry vines? I would be pleased to hear from my brother farmers on this subject. Those veteran pioneers, Capt. Sebina Small, of Harwich, and Dr. Miller of Franklin, Mass., might throw some light on this subject, as they have reclaimed swamp land and made it valuable cranberry meadow. Mr. Editor your opinion, too, is asked. CALEB E. PARMENTER.

Attleboro', Mass., Jan., 1868.

REMARKS.—A dirty swamp, such as you describe, was converted into one of the finest cranberry meadows in our knowledge. The process of reclamation was by flooding the land until all the bushes were entirely dead, then tearing them up root and branch, burning, spreading the ashes, levelling, and then setting the plants in stools. We have no doubt but the bushes would sprout and cover the surface, if cut as you propose; and covering with leaves, straw, or any thing else, and burning, would be a tedious and expensive process. It may require more than one summer to kill the brush by flooding, but if so, it will be cheaper than cutting it two or three times. If you cannot flood the land without encroaching upon your neighbors, and cannot obtain their assent to flow, then the only course left is to tear up the bushes and level and dress with sand in the best way you can. If, upon examination, you find sand below the surface, and within twelve inches of it, you will, probably, have no occasion to haul and spread it upon the surface.

WHITE SPECKS IN BUTTER.

From ten years' experience in butter making, I come to the conclusion that it is neither strong current of air nor excessive heat that causes the white specks. A strong current coming directly on the milk will break the cream and prevent its rising. Heated air will make the cream soft and oily. I am troubled about white specks only in warm, wet weather. Warm, damp air brings the white specks on the top of the cream. They do not originate in sour milk at the bottom of the jar. They may be seen by looking across the milk before skimming. At least, this is my opinion. My milk is set in a large airy room, having two large windows at the north, which are taken out during the summer; two at the west, and one at the south, and a door at the south covered by a veranda. The temperature of the room is regulated by blinds which are opened at night, and for a while in the morning, and closed during the day if the weather is warm. Our milk shelves are made by placing four hard wood scantlings, two inches and a half square, on two carpenter's "horses," which make a solid place for the rows of pans, accessible on all sides, and of a convenient height to strain and skim the milk without moving or lifting. In this way the air comes in contact with all the milk in the room. During the past week of extreme hot weather, no white specks have appeared, and with the use of ice when churning, which we think tends to prevent the specks, good butter has been made. Some pass the cream through a strainer to get out the specks. There is also now in use a cream grinder, or condenser, that takes them all out of the cream. We think it best to make cheese during the warm sultry weather of dog days. One great trouble with many dairies is that the milk rooms are too small by far, and without proper ventilation. Whoever takes care of the milk should regulate the temperature of the room. This is something that I always see to myself unless sickness or absence from home prevents. Where there are no blinds a frame to fit the windows and covered with musquito netting, or cloth for cheese bandage is by far better than nothing.

Fairfax, Vt., July 4, 1868. MRS. L. F.

RAISING CHICKENS.

Last year I let my chickens run with the hens and lost over one hundred. This year I let them run with the hens one week, then took brood after brood and put them together in a box, or house, about three feet wide by six feet long, and have not lost three. The box must be weather tight, the roof to pitch one way, shingled, and made like a scuttle, to take off pleasant days to dry the inside of the box. Under the eaves of this roof there should be a space for proper ventilation; and one or more lights of glass must be put in the box for the admission of light, &c.

I run a bar across about six inches from the floor, midway of the box, to which I fasten an old blanket and let it hang back to the side of the box where it reaches the floor, and is kept in place by a brick or two being laid upon its edge. Then at the end of the box there is a door to slide up, just large enough to let a half grown chicken go in to a yard as large as you please, with a fence about a foot or more high, made of boards, slatted at the top, and leave a place for the large chickens to fly out and in as they please, keeping the little ones in till they get older. Shut the door nights to keep rats, skunks, &c., from the chickens.

The first brood should be put under the blanket to learn them the way. After there are two or three broods, the blanket may be taken away, as the larger ones will keep the smaller ones warm enough.

The hens that you have taken the chickens from should be kept in a room for three or four days with a rooster and they will go to laying in a short time. I think this is better than to have a hen run all summer with three or four chickens, as they often do. Chickens must be kept dry. To avoid hawks, &c., keep a guinea-hen. I. JORDAN.

Franklin, Mass., July, 1868.

IMPROVEMENT OF STOCK—CATTLE SHOWS.

I have noticed in your paper that quite a number of farmers have written in regard to improving our stock,—horses, oxen, cows, sheep, hogs, and even down to hens. Now I think we do not make effort enough in that respect, particularly in the New England States,—I mean the majority of us farmers. I have always taken quite an interest in the improvement of stock, although my opportunities and means for making such improvements have been rather small, but I am hoping I may be able to do more in the future. But small farmers like myself need encouragement and information as to the best breeds, and the most economical means by which such improvements might be commenced.

When the State Fairs first went into operation, I looked to them for assistance in this direction, and met with some success, but I think none of our Agricultural Fairs have as yet arrived at perfection. It appears to me that they are susceptible of still further improvements. By some change in premiums and otherwise I think they might be made far more attractive to farmers, and especially to stock growers. The improvement of stock is a subject that requires much knowledge and much persistent and intelligent effort. We must give our minds to the subject, and it appears to me that our agricultural societies might be so

managed as to create a far greater interest in the matter, and thus be worth millions of dollars to the country. Will not our Fair men put their heads together and see what they can do to make their exhibitions more instructive and more attractive to the men, women and children who ought to be interested in these matters?

These inquiries and suggestions are made by one who has little book knowledge, and are written while tending the sap kettle at night, and are his first words for any paper. J. I. C.

Danbury, N. H., March 30, 1868.

CRACKING OF PEARS.

I have a very fine standard pear tree, (Flemish Beauty,) that for the last two years has not perfected its fruit. Has borne very full every year, and the fruit grows to its full size, but a few weeks before the time for the fruit to mature it cracks to the very core and falls off. Whoever will inform me of a preventive for this disease will greatly oblige A SUBSCRIBER.

West Mansfield, Mass., 1868.

REMARKS.—Fruit growers generally appear to know very little about the cause of the cracking of certain kinds of pears. Not long ago the question was propounded to the New York City Farmer's Club. One man said it was the want of clay in the soil; another stated that his pears on stiff clay cracked badly. One Dr. Langinschwartz suggested that it was caused by microscopic lice; while another "Dr." with a shorter name, had used the most powerful microscopes but could see no insects. A "Prof." thought the disease the result of want of materials in the soil to form a firm skin. One member named ashes as a cure; another had used ashes abundantly, which made the trees grow but did not prevent the cracking of the fruit. The usual remedy is to re-graft to Bartlett, Washington, Buffum, Anjou, Howell and other varieties which are never affected in this way.

We copy the following from a valuable paper on the "Diseases of the Pear," read by Thomas Meehan, Esq., editor of the Philadelphia *Gardener's Monthly*, at the meeting of the American Pomological Society, at St. Louis, Mo., last fall. Though somewhat lengthy, we think those who have been troubled, as we have, by the utter failure of fruit from this cause, will read it with interest.

"Of *cracking* there are two very distinct forms. In one case, there are but one or two deep clefts, going right in to the core. In our region, Beurre Giffard and Onondaga are nearly worthless from this disease. I cannot, of this, either form any satisfactory theory of cause or cure.

The other form of cracking is the one well known to exist in the White Doyenne, and some other kinds. This I have very clearly traced to a parasitic fungus. About the middle of June, in distinct spots a little paler than the usual green chlorophyl, it can be seen beneath the skin of the leaves and young fruit. On placing these spots under a very powerful microscope, a cell-formed fungus can be distinctly traced, with the young cells in various stages of development. They destroy all the plant's cells with which they come in contact; but as the species seems to propagate only by cells, and not by threads and runners, like many, the damage from each nucleus does not extend far. However, after a couple of weeks, all these cells are destroyed, both of the internal tissue of the leaf and of the cuticle, and a small black spot is the result. The whole time occupied in the development of this fungus is not over three weeks. The spores fly off into the atmosphere, and are probably carried down into the earth by rains. No further development seems to take place that season. How these fungoid spores get into the tissue I have been unable to decide. The only way seems to be with the sap through the roots; but trees affected with this disease have been grafted with Bartlett and other pears, and no trace of the fungus has been found on them, though four years grafted. If the spores come through the sap, one would suppose it would as well circulate through the sap of a Bartlett as through that of a White Doyenne. We can only say, that there are delicate organisms in plants which we cannot fathom, except to know their differences by their effects. We know that the Bartlett, and White Doyenne have no two things exactly in common. These differences of organization it is which makes one the Bartlett and one the White Doyenne. Exactly what they are we cannot appreciate, but the delicate fungus may. There may be food for it in the Doyenne, but poison in the sap of the Bartlett. I leave this matter to future researches, noting here, that the fungus, after destroying the cuticle of the pear, of course prevents expansion, while the other parts, continuing to swell, draw away from the indurated part, and thus mechanically crack the pear.

This fungus is often found abundantly on the Seckel pear, but its skin being thicker, the injury does not penetrate deep enough to prevent the due swelling of the parts beneath; hence the Seckel cannot possibly ever crack from this fungus.

It is clear, from this theory of the disease, which I unhesitatingly advance as the true one, that no washings, waterings, scrapings, or external applications of any kind, can possibly have any effect. The only course I see is, for the cultivator to carefully watch his orchard, and when any leaves showing the pale blotches of this fungus appear, pick them off and burn them, before they have time to mature and scatter their spores for another season's crop. On very large trees this cannot be done, but in young orchards it might be more easily performed. I would also have all leaves which fall early with this disease burned as they fall. So extensive is this trouble of leaf fungus, that it seems almost puerile to recommend a remedy so disproportionate to the evil; but I can see nothing better."

BLIGHTED CHERRIES.

I herein enclose a lot of our plums. They are the common hardy red plum, and for several years have been subject to this sudden enlargement after blossoming. We call them puffs, they puff up so suddenly. I picked all these from a tree to-day,

and the branches are filled with them. On one twig there were twenty-three puffs and five sound plums. The puffs vary, as you see, from a half inch to one and one-fourth inches in diameter. We know of no cause or cure. Some wild cherries are affected the same way. Please give us your opinion of this development. The sound plums are about the size of marrow beans.

Irasburg, Vt., June 15, 1868. Z. E. JAMESON.

REMARKS.—We are unable to give any satisfactory explanation of the condition of Mr. Jameson's plums. We observe they have no stones in them. Is it owing to deficient impregnation? Is it a development of the ovary into a sort of fungus or smut in the absence of the stone or seed?

We notice that the editor of the *Canada Farmer*, whose attention has been called to the same singular condition of this fruit, is also unable to define or account for the disease.

BLEEDING OR WEEPING TREES.

The trunk of my Horse-chestnut tree is bleeding badly, and I cannot divine the cause unless it is the work of the borer. The bark appears to be broken in several places, and the sap is flowing therefrom quite freely. What can I do to prevent it? A. B.

July 20, 1868.

REMARKS.—We are unable to advise our correspondent, but hope some of our readers will do so. A similar inquiry was lately addressed to the editor of the *Maine Farmer*, in respect to what the writer calls the "weeping" of an elm tree. In reply the editor remarks:—"We have have seen an elm upon the grounds of Wm. R. Smith, Esq., in Augusta, that is troubled with the disease or habit of "weeping," alluded to by our correspondent. On the south side of the tree, about three feet from the ground, the sap oozes out and trickles down the bark in a constant, uninterrupted flow. When it first comes out it is quite clear, but as it runs down it is changed to a thick, brownish matter, about the consistency of mucilage. The flowing of the tree in this manner was first observed a year ago last spring. It continued through the season, and again commenced this spring, although the quantity of sap that forces its way out is much less this season than it was last. The tree is something over a foot in diameter, is probably thirty years old, and has the appearance of a healthy, vigorous growing tree. This is the first and only instance of "weeping" in an elm tree that has come under our observation. The effect is probably caused by an over-supply of sap, which escapes from the tree in this manner, or the course of the sap becomes interrupted by some agency for which our knowledge of vegetable physiology is not sufficient to account."

SICK CATTLE—CHERRY LEAF POISON.

About three weeks ago, I first noticed that one of my yearlings was sick. One of the joints in the fore leg swelled nearly to the shoulder. The animal did not feed like the rest of the cattle. In breathing, which appeared to be labored and painful, it made a wheezing noise. A blue sort of film covered the eyeball so as to render it totally blind, and a yellowish, frothy, and very offensive matter was discharged from the mouth and nose. Hard bunches rose from the shoulder to the head under the hide, and the creature soon died. Another has commenced wheezing in the same way. If the editor of the FARMER or its readers can tell me the disease or its cause, and prescribe for it at once you will greatly oblige one whose stock of cattle is not large, and who wishes to arrest the disease before they all "go for it." AZEM NILES.

West Swanton, Vt., July 22, 1868.

REMARKS.—From the foregoing statement we have little doubt that the cattle were poisoned by eating cherry leaves—probably those on branches broken in gathering fruit, or otherwise, and more or less wilted. Articles upon the subject will be found in the Monthly NEW ENGLAND FARMER for 1867, at pages 494 and 534. In the one on page 534, Mr. E. French, of Braintree, Mass., gives an account of two cows which he saw that had eaten wilted cherry leaves. One died; the other was in great agony and would probably have died had she not been relieved by forcing about half a pound of the soft ends of a strip of salt pork down her throat till she swallowed it. His theory was that instead of poisoning, the leaves being wilted, tough and indigestible, choked the animal. We think, however, there can be no doubt of the poisonous properties of the wild cherry leaves. Doses of oil, fat or grease are recommended, as are also drenchings of water dashed upon the animal by the bucketful. But prevention is better than cure. Mr. H. C. Meriam, Lowell, Mass., has had cattle poisoned by eating the leaves on the cherry brought to the door-yard for firewood, and advises farmers to manage their cherry trees on the farm as carefully as they do the arsenic in their houses.

HORSE RACING AT FAIRS.

To the article in the FARMER of July 18, on this subject, I wish to add my hearty amen! The writer expresses my own sentiments, and I believe the sentiments of thousands who are interested in the proper management of our agricultural Fairs. Men of principle and women of respectability who are willing and anxious to take an active part in agricultural exhibitions, and who believe they ought to be made instructive and beneficial to themselves and their families, cannot now even visit them with a clear conscience. The "pure agricultural horse-trot" has opened the door to the horse-race, with its train of jockeys, gamblers, drunkards, and other baser specimens of shipwrecked humanity. To their performances the bulk of the money raised for premiums on agricultural productions, and a large part of the time assigned to their exhibition, are now devoted. "For the best speed of horses, one thousand dollars," "for the best pair of working oxen, twenty-five dollars," which I copy from a "List of Premiums" now before me shows the way in which the money goes that farmers contribute to promote agricultural Fairs, and which they pay at the gate as admission fees.

Let the programme be changed; but not to the exclusion of the horse show. That noble animal is just now acting too important a part in our farming operations for that. But what have farmers to do with a speed exceeding seven or eight miles per hour? Give more time and money to ploughing with two, three, or four horses; to mov-

ing heavy loads in the easiest and best manner, and to trotting half a mile or so, with a load of not less than 2000 pounds, &c. Some such change it seems to me would in a few years encourage and introduce a very different style of horse from that which is now so popular on the race course, and a very different system of breeding and training. The delicately formed, small limbed, light horses which are exhibited on our agricultural race courses are valuable only for their 2:40 gait.

Let us have more on this subject, and let it come from those who are more accustomed to handling the pen, and who are less nervous and excited on the subject, than myself. B. B.

Plymouth, N. H., July 20, 1868.

MACHINES FOR MAKING DRAIN PIPES.

I am greatly interested in the column of "Extracts and Replies." I find many things which are worth more than the subscription price of the FARMER. Yet there are some things which I do not find there, and that is why I trouble you with this communication.

Where can drain tiles be obtained and what is the cost? Can they be made at any brick yard? If so where could a machine for molding pipe tiles be obtained? Is such a machine complicated and costly, or is it simple and its cost moderate?

Roxbury, Me., 1868.

REMARKS.—Drain tiles, or pipes, can be obtained in Boston at several places. They can be made at any brick yard, but require an oven for baking them, such as persons have who bake earthen ware. Machines for molding the pipes are made at Albany, N. Y., and are not complicated or difficult to manage. We do not recollect the name of the maker. A dozen years ago, a machine cost about $150.

MANAGEMENT OF NEWLY PLOUGHED LAND.

When we break up new ground that is ploughed deeply and turned over smoothly, in which direction of the furrows shall we harrow and furrow for potatoes? And when the field is hard hill land and somewhat rocky, and of course is not well nor smoothly ploughed, how then shall we proceed? You will much oblige us by giving your opinion on these points. PUTNAM TYLER.

Marlow, N. H., May 22, 1868.

REMARKS.—As Mr. Tyler informs us, in a private note, that he is nearly seventy-five years of age, his great experience entitles him to give an opinion for the benefit of his brother farmers, rather than to ask ours. But as our opinion is asked, we will give it with all due deference to his superior wisdom. We should harrow lengthwise the furrows, and then furrow across them with a light plough. If the sod is thin and much broken, it makes but little difference which way it is worked.

HOW TO RID CATTLE OF LICE.

I have been a constant reader of your valuable paper many years. During that time I have seen a great deal in its columns concerning "Lice on cattle."

Several years ago, I had some heifers come home literally covered with lice. In less than a week they were communicated to my entire stock. I tried nearly every (so-called) remedy that I ever heard of, but with no beneficial effect. Being acquainted with the nature of sulphur, I sprinkled it on to the entire surface of both horses and cows, which thoroughly rid them of the lice; and I have never been troubled with them since. I have recommended it to many others who have tried many things in vain, and in every case it has been "just the thing." G. F. P.

Groton Centre, Mass., 1868.

WHITE SPECKS IN BUTTER.

The causes of white specks in butter are various, but the prevention with me is to strain the cream before churning, through a piece of cheese sacking or some other thin cloth. If the cream is thick, hold the corners of your cloth with one hand while you press the cream through the cloth with the other. Try it. A LOVER OF GOOD BUTTER.

South Wallingford, Vt., July 6, 1868.

TOP DRESSING GRASS LAND.

Your correspondent "Early Cut" has expressed ideas in regard to hay which correspond with mine. I wish to ask him how he applies his manure directly to grass land? If as a top-dressing, whether he would apply immediately after haying or late in fall or spring? Also with, say forty loads of manure, how much ground would it be economy to go over? SUBSCRIBER.

Sabattus, Me., July 18, 1868.

PARALYZED TURKEYS.

A friend of mine has a brood of young turkeys in a very singular way. They have lost the use of their legs. At first their toes turn in, then in a few days they are not able to stand. They eat and grow well, but cannot get about. Can you or any of your numerous readers tell what ails them, and what will help them. A. W.

South Hingham, Mass., July 19, 1868.

PLOUGHING IN CLOVER.

Will you give your opinion upon the question whether it is best to plough in clover green, or to turn the sod next spring, when the object is the improvement of the soil. E. SAWYER.

Northfield Farms, Mass., June 29, 1868.

REMARKS. — Plough in the clover green undoubtedly. The next spring plough again, or cultivate before seeding or planting.

A GOOD NATIVE HEIFER.

Having just read the statement in your last paper of the Tunbridge, Vt., Durham heifer, which produced seven pounds of butter in the first week of June, I am moved to say that I have a five-year-old common native heifer, from whose milk in the second week of June we made eleven pounds and one ounce of as nice and yellow butter as you ever saw. The heifer never ate a spoonful of any kind of grain in her life. LUTHER J. HOLT.

West Epping, N. H., July 10, 1868.

PUMPING WATER FROM A MUCK HOLE.

I have a deposit of meadow muck of the best quality, where former owners have dug holes, leaving a space between each, so that they got only about half the muck. These fill up with water, though not to the surface, and there is no outlet unless the water can be raised to the surface. I wish to get rid of the water in order to save the muck, and have but one hole. Can you or some of your readers tell me what kind of a pump would be best suited for the occasion?

Shrewsbury, Mass., 1868. MARK FARRAR.

REMARKS.—Will it not be rather too much like work to raise the water in a muck hole or swamp

by the use of the best pump in the world? Where the banks are sandy or gravelly a large amount of water can sometimes be got rid of by conducting it to a hole or well dug for its reception. But are you sure it cannot be drained?

AGRICULTURAL ITEMS.

—There are complaints of more than usual loss of lambs this season in New York.

—Five cows recently died in Belmont Co., Ohio, from drinking brine emptied from a meat barrel.

—A writer in the *Journal of Chemistry* says that a ton of tobacco exhausts the soil as much as fourteen tons of wheat or fifteen tons of corn.

—During the month of April nearly 5000 cattle were exported from Canada to Buffalo, the duties on them footing up $19,000.

—Green paint in powder scattered through the rooms of a house will expel all kinds of insects; so it is said.

—William P. Hayden informs the *Maine Farmer* that equal parts of garget root, alum and tobacco, steeped together, will cure the sniffles in sheep. It should be forced up the nostrils with a syringe.

—Some farmers who have had trouble in getting single men as hired help, are finding out that it pays to build plain, but comfortable cottages, for tenants, and hire married men.

—As we consume every kind of woolen fabric, from horse-blankets up to superfine broadcloths, so do we require every kind of wool, from the coarsest up to the finest.

—It is said an Ethan Allen colt, after having been pronounced worthless as a trotter, was sold in Boston, five years ago, for $120. The purchaser has recently been offered 12,000 for him.

—It is said that it takes 100 pounds of green clover grass to make twenty-five pounds of hay, while 100 pounds of witch or quack grass will make forty pounds of hay.

—Mr. Meeker, agricultural editor of the New York *Tribune*, recently stated that strawberries have not averaged over twelve cents per quart, in that city this season.

—The average life of a mowing machine is five years; some will use a mower or a reaper twenty years; but the average number of farmers buy a new machine once in five years.

—It is said that Bonner feeds his horses from a box sitting on the floor, as he believes it is natural for them to take their food from a level with their feet.

—Less than one year since a North Carolinian commenced a cheese factory. He has now 180 cows, and has made and marketed over 8000 lbs. of cheese.

—The Dixie *Farmer* publishes an article on the prevention of weevil in wheat. It is done by salting as the grain is put up in the bin—a half pound to the bushel.

—The Irish *Farmers' Gazette* says the subject of selling adulterated fertilizers attracts no little attention in that country, and adds that a large proportion of the Peruvian guano sold in Ireland is made up of chalk, clay, marl, powdered bricks and washed out phosphate guanos.

—Mr. Knox, the famous fruit grower of Pittsburgh, Pa., does not cultivate his strawberries deeply, but very slightly to kill the weeds. Manures freely, but does not believe in underdraining. Does not like to keep a bed over four years. Uses light coating of straw for mulch.

—Shirley Hibbard tells us that in London all the honey made by the city bees is more or less contaminated with soot. One cup of honey gathered in 1858 was so discolored with soot that it took two months to settle, and then the bottom of the jar was coated with a black deposit, although the honey itself became comparatively clear.

—The Arabs, the most careful of their horses of all people, do most of their horse-feeding at night. They say that feeding in the day time does not impart so much vigor and elasticity to the animals as night mastication does. Their saying is that "barley at night goes to the buttock—in the morning to the manure." They afford water too very sparingly during the day time.

—Since the railroad was opened through to St. Albans, there has been shipped to Boston from that place over 38,000,000 pounds of butter and over 18,000,000 pounds of cheese, which brought about $14,000,000. The sales of butter and cheese, in a single day, at St. Albans, often amount to from $20,000 to $30,000; and per year not less than $1,500,000.

—The *Economist*, (New York,) states that the imports of foreign wool at New York for the first half of the calendar year are only about half the quantity and value of those for the same period of last year. "For the first six months of 1867 we imported 13,000,000 lbs., valued at $2,233,000, against 6,700,000 lbs. this year (1868,) valued at $1,105,000."

—Up to June first, three cows belonging to Dea. Abiel Peabody, of Weston, Vt., which came in during the month of February, had produced 325 pounds of butter sold; two calves sold for $22; one calf raised and worth $25. The cows are a mixture of Durham, Devon and native blood. Mr. Peabody adds, as the result of his experience and observation, that "six good cows well kept will produce more than twelve common cows poorly kept."

—An Illinois correspondent of the *Country Gentleman* believes that the climate in the prairie sections is changing; that the heat is becoming more oppressive and the cooling breezes less frequent. Before cultivation, says he, "the sloughs remain

full, and cool the air; the sun does not get at the earth to heat it up to a boiling point, and the winds play over the surface and make the hottest days delightful. When these prairies are settled and cultivated, if the climate modifies, as I think it will, the heat in summer will be nearly insufferable."

—In the Monthly Report for April, of the Department of Agriculture, it is said, "It is worthy of careful mention and notice, that in every location where wheat suffered from freezing, those fields that were planted with the drill are comparatively unscathed, while the broadcast sowing is in a miserable condition. It is also found that thorough tillage enables the thrifty and well rooted plant to endure the action of the frost, while the carelessly sowed wheat is ruined."

—The *Maine Farmer* gives the following recent sales of thoroughbred stock in that State: from the Short Horn herd of Hon. Warren Percival, Cross Hill, are the following: Yearling bull "Prince," 7125, to Clinton Howe, of West Sumner; yearling bull "Royal Turk," 7240, to Willard Lothrop, Esq., of Leeds; bull calf "Roan Prince," and yearling heifer "Sunrise, 2d" and "Pink," to S. N. Briggs and Brother, of Livermore; and two two-years-old heifers to Joseph Miller, Esq., of Waldoboro'.

—Mr. E. B. Slocum, Grass Lake, Michigan, gives the New York Farmers' Club the following plan for milk shelves: Erect a post, say four inches square, in your milk room. About two feet from the floor, nail one lath on the post in a horizontal direction; then on the opposite side, nail another lath the same way, letting the lath extend far enough from the post, to set a milk pan upon each end. Immediately above and close to these laths nail two more laths in a similar manner, but in opposite directions. You will then have a tier which will hold four pans. Eight inches above this, then eight inches still farther, and so on. One post can hold twenty-four pans.

—An Erie county correspondent of the *Ohio Farmer*, says that in consequence of the drought last year, short keeping with little grain during the winter, and exposure of the sheep to many long spring rains, the wool clip is generally light, many estimating the average yield per head fifteen to twenty-five per cent. less than last year, but the staple is more valuable, looking white and clean and unusually free from oil. Evidently farmers are improving in putting their wool in better condition for market. But the prices offered by the buyers, from thirty-five to forty cents per lb., is not satisfactory to the sellers, and the larger lots are not generally disposed of.

—All wrinkled peas are superior to, and more delicate in flavor than those that present a full and perfect form; like sugar corn, the saccharine matter which they contain causes them to shrivel when dried.

PRESERVATION OF FORESTS.

The earnest manner in which our correspondent presents "the other side" of this subject in another column may strike some of our "standard authors" differently from what it does the writer of this article, who was among the first "crop of children" raised in one of the new settlements of an interior town in New England.

At the time of his early recollection there were but few framed houses in the neighborhood, although from the elevated out-look of his home, it was one of the amusements of a cold winter's morning to count the ten or a dozen columns of smoke that rose from as many "openings" in the almost universal forest which clothed the adjacent hill-sides and valleys. For a distance of some three miles on one road, which he most frequently travelled, he can now count on his fingers ten such log houses without a single framed one. The district school house was a deserted log "camp" or hut. There was not a wagon or even a cart owned or used in the whole district. Hay and grain, corn and potatoes, were drawn on sleds. Marketing was mostly done in the winter season, as in summer the roads were little better than bridle-paths. Butter was carried to the store and grog brought home on horseback. The sight of a wagon, with which some pioneer drover or persevering pedlar occasionally worked his way thus far up the stream formed by the mountain springs, was an event in the life of the young folks, that caused more excitement than the passage of a caravan with music and elephants would now.

We have recently visited the scene of these recollections. It was sad to find that even here we were a stranger and in a land of strangers. The country itself seemed changed. The mountains were higher and closer together than formerly. The "flats" were less flat, less broad, less long. The "big brook" was smaller and more crooked, and had got out of place, at many points. The old mills that once stood on its banks had been washed out clean, or crumbled piecemeal. The forests had been driven towards the summit of the hills, taking with them the mosquitoes and fleas, and we believe a large share of the seeds of the summer fevers which formerly prostrated hard-working men and women. The log houses are no longer seen; but com-

fortable and in many cases tasty farm buildings occupy their places. Carts, wagons, and even the family carriage, now roll over good roads, where we remember sloughs, and rocks, and roots, and "sharp pitches." Where we once followed the sturdy mower with a "sharp stick," boys now scratch their heads as they stand with "nothing to do" but watch a machine that not only cuts the grass but spreads the swath. Great changes, real and imaginary, were presented to our eyes. The actors of the past were gone. We followed them to a neatly walled graveyard, where on marble and slate —both the product of the surrounding hills— we read a brief biography of most of these early settlers. They "rest from their labors and their works do follow them." Were they good or bad? Did they benefit or curse the land? Shall we approve or condemn?

But we noticed other changes. On some of the land from which the primitive forests were removed since our recollection, there is now a thrifty "second growth," which has already produced "saw logs" and sugar orchards. Indeed many of these hill farms are now devoted to pasturage and the growth of wood. Even in the vicinity of Boston, it is a mooted question with the oldest inhabitants whether the amount of wood is less now than it was fifty or one hundred years ago.

Wood seems to be the natural product of our New England hills. Our cleared lands manifest a strong tendency to revert, not to a barren desert, but to a tangled forest. Bushes and wood are continually encroaching on pasture and cultivated fields. And to our minds there is little danger that the hills of New England will ever become as destitute of vegetation as are those of Egypt and of other countries, whose soil and climate are unfavorable to the growth of forest trees.

Effects of Improved Culture.—Columella, in his fourth book, *De Re Rustica*, tells the story of a certain Paridius, who had a farm planted with vines, and he also had two daughters. Of his farm, he gave one-third to the man who married his eldest daughter, but by increased attention to cultivation, he received as large a product as before, from the two-thirds which he had reserved to himself. Afterwards, on the marriage of his second daughter, he gave away half of the remaining land, and in a short time, he found by still greater improvements in culture that his income was in no respect diminished. From this, Columella very naturally infers that as much attention and labor was bestowed on the remaining third, as had been previously bestowed on the whole farm. Is it not true, at the present time, that if the manure and labor now expended on the whole farm, were expended on one-third of it, the crop, in a majority of instances, would be in no respect diminished? We have yet much to learn respecting the capacity of the soil.

THE LEAF.

The fibres of the leaf which spread out from the base, are prolongations of the vessels of the wood; and beneath them, forming the covering of their under surface, are similar prolongations of the inner bark. The green exterior portion of the leaf is a continuation of the outer tissue of the bark in a thin, porous form. The pores or mouths in the green portions are an essential part of their structure. The leaf of the common lilac is said to contain not less than 120,000 pores to the square inch. They are most numerous on the under surface. The leaves spread out their broad surfaces to imbibe gaseous food from the atmosphere. Under the stimulus of light, they continually absorb carbonic acid from the atmosphere. In the vessels of the leaves, this is decomposed into carbon and oxygen. The carbon is retained and the oxygen thrown off. During the darkness, oxygen is absorbed, and combining with the carbon in the vessels, is thrown off in the form of carbonic acid, but much less is thrown off in the night than is absorbed in the day. Hence in the Arctic regions, where the sunlight is never absent during the summer, and there is no darkness to interrupt the absorption of carbon, we can understand how vegetation pushes upward with almost miraculous rapidity; and in regions where the days are very long and the nights comparatively short, we see why the wheat and corn spring up and reach maturity in a few weeks.

Twenty-five hundred gallons of air contain about one gallon of carbonic acid gas. To find and absorb this small quantity of gas, the tree spreads out its thousands of feet of leaves, which are constantly in motion in the ever moving air, and thus the ponderous trunks of

the forest are built up, atom by atom, from the atmosphere.

On a single oak, seven millions of leaves have been counted. Now if each square inch contains 120,000 pores, and each leaf four square inches of surface, it may not be difficult to show in figures the number of pores on the leaves of the oak, but who can grasp the idea, or form in his mind any adequate conception of such a number? But this is but one of the trees in the forests that spread over the surface of the earth at this moment, and which have sprung from it since the creation. And every blade of grass and grain and every shrub and weed is equally busy during its growing season, in drawing its substance from the fleeting wind.

MANAGEMENT OF MANURE.

There may be nothing new in the management of manure described in the following paragraph, which is part of an article in the New York *Tribune*, detailing a visit to the farm of S. M. & D. Wells, of Wethersfield, Conn., but how many there are who don't happen to have a supply of dried peat or muck on hand when they need it. This is the season to lay it by in store:—

The Wells Brothers' manufacture and management of manure is the important subject. They have a spacious stable, containing forty stalls, the ground surface of which is cemented. A supply of dried peat or muck is kept on hand, and a wheelbarrow full is placed daily in the gutter behind each row of eight cows. This absorbs all odors and moisture, and is easily shoveled out the following morning, through a small door, into an enclosed shed, which also has a cemented bottom. Thus nothing is lost by leaching or other waste, and cleanliness is secured. The manure thus obtained is of excellent quality, and the brothers have proved by experiment that the addition of muck not only doubles or triples the quantity, but really makes a better fertilizer than pure stable manure. That which is not demanded for the onion beds and other ploughed ground is used as top dressing for the meadows. This is considered the best way of applying it. It is put on with a liberal hand, and the result is easily perceived. Last spring a portion of one field was top-dressed, and it will cut two or three tons to the acre—the other part was not top-dressed, and will produce less than half that amount. The brothers do not approve of fancy manures, as a general thing. They are convinced that no fertilizer pays in the end, the effect of which cannot be perceived for three or four years afterward. They once applied Peruvian Guano, and received a crop of 60 bushels of shelled corn to the acre; the next year they planted potatoes in the same field, without further manure, and did not get enough to pay for digging, though the season was favorable for their growth.

—Lima beans often rot in the ground. An almost sure remedy is to grease them.

For the New England Farmer.

PRESERVATION OF FORESTS.

So much has been said and written in regard to the importance of preserving the woodlands, that it almost seems a virtue to talk of the beauty and usefulness of forests.

Your correspondent "H." in the FARMER of July 4th, says, "forests perform a threefold purpose; first as a means of renovating the soil; second their value for timber and fuel; and third their influence on our climate."

It seems to me that the earth is designed for a habitation for men; and not specially for wild beasts, birds of prey, noxious reptiles and insects. While it merely affords such creatures a home, it is just starvation and death to the human family. In this view, the forest is our enemy, to be overcome before we can live surrounded by those reliable supplies of food and comforts essential to civilized life. When we consider the labor and hardship of the pioneer's life, is it not strange that any one should think by uttering the warning cry, "Woodman, spare that tree!" that he is manifesting a refined taste, and a praiseworthy and far-seeing interest for the welfare of his fellow beings? If the fact is admitted that this earth was designed for man's habitation, and that his mission is to subdue and replenish it, is it not his duty to clear away the forests? Can we return to the wigwams and tomahawks of the past, and live in the woods? "But the soil becomes exhausted," it is said. Not by cultivation, but by mismanagement, I reply. "The climate changes." And so it does, but for the better, I am prepared to respond, and will cite the history of new and old countries in proof of my assertions.

Look for a moment at the claim of renovating the soil by growing forests upon it. Is it not utterly impracticable? The whole crop is removed on clearing; nothing being allowed to rot or decay upon the ground or incorporated with the soil, and usually fire burns up most of the leaves and vegetable mould that has accumulated; so that, in reality, besides stumps, that impede cultivation, you have only the value of a few loads of vegetable mould, and a few bushels of ashes left as the result of this system of improvement. It is besides an exceedingly slow process, as it requires many years to practice such a rotation. It is moreover a costly way, because the land is worth money, and money at the interest it now commands will double in from eight to twelve years. Calling it ten years, and land say at twenty dollars per acre, planted now to trees and cleared in 42 years, in which time "H." has seen saw logs grow, it should be worth three hundred and twenty dollars per acre; and then we lose the annual income, which if cultivated would average twenty dollars per acre, or to allow liberally for labor expended, call the loss of income only $10 per year, and we have $420 to add to the $320. So your

timber should be worth over $700, to let you out without loss. It seems evident, therefore, that raising saw logs would be unprofitable for a poor man.

Here in Vermont where woodland is worth from two to forty dollars per acre, a good sugar place is considered the most valuable of all our forests. Now there are but few sugar places where the trees will average fifty per acre. These trees will yield about 100 lbs. of sugar in a season, worth $12. Now the produce of an acre of tillage land should be very much higher. Woodland when already grown is the most unprofitable of all land, and how much more unprofitable to own it while growing, in a country where there are taxes to pay and folks live by eating.

After a field has at length yielded a crop of wood, it will require good management to clear off the wood and stumps in such a manner as to have the land in as good shape as it was before the trees were planted, and we should be too old to perform the necessary labor of clearing and managing it, and our children would probably do as we ought to do, if living on land that requires such a course of improvement, that is, sell it or give it away, and move to a country where the Creator has provided a soil that will yield some return for man's labor.

In regard to changes of climate caused by the clearing up of forests, I wish individuals in different sections of the country, would candidly state what such changes in their respective localities have been. At this time, so soon after the clearing has been done, it could be ascertained whether the climate has not in every case changed for the better. We should not presumptuously charge folly to the Almighty. As man was created to till the earth, it seems natural and just to expect that obedience of that law should not imperil his health or happiness.

Here in northern Vermont the favorite locations for early settlers were upon the hills, because the frosts were less heavy, and crops more certain. The high lands were visited by breezes that purified the air and dispersed the fog and miasma that seemed to linger in the valleys. The valleys were also interspersed with swamps, muck beds, &c.; but after the hills were cleared the low land became dryer and now proves to be the most productive of any in the region.

Fever and ague never prevailed here to any great extent; but consider the peril to the health of a laborer who begins a clearing in a valley where the trees stand one or two hundred feet high around his little opening of perhaps five acres. The sun sending its hottest rays upon the earth, blackened by recent burning, and no breath of air stirring. The rain comes in torrents in summer. The snows falls deep in winter.

Honor to the sturdy pioneers, who, notwithstanding the adverse climate and somewhat uncertain crops, cleared up the land and let in the sun to dry up the pestilential damps, and allowed the breeze to cool and equalize the temperature as it wafts them away.

The changes of climate occasioned by clearing up the forest are not to be deplored, but accepted with thankfulness, as the labors of the farmer are more surely crowned with success. I have read that in some sections of the West and in California, where the rains were formerly very abundant at certain seasons, followed by droughts, now occasionally showers come in the dry season, showing a favorable change in climate. As evidence of the possible productivness of lands without forests, we can look to the most fertile regions of the West,—the extensive prairies.

The value of wood for fuel, building and fencing purposes is very great; but a few acres are enough on each homestead. If forests are necessary to a country, the State should own and exempt from taxation, a certain number of lots in each town, and keep them,—as men insure their buildings, lives, or erect lightning rods on buildings,—to ward off some calamity that may possibly happen.

Z. E. JAMESON.

Irasburg, Vt., July 18, 1868.

BUYING AND SELLING WOOL.

We are heartily glad to see the wrangle that is going on in many sections of the country about buying and re-selling wool. Conventions of wool-buyers meet and resolve to buy wool only under the one-third-shrinkage rule, and wool-growers, either in individual or associated capacities, denounce such action on the part of the buyers as "outrageous" and "obnoxious." Some parties have carried on the talk about gum, and grease, and tar, and lampblack, and "pitch-tops," till an outsider might suppose that the men engaged in the business of raising thoroughbred merino sheep were the biggest set of rascals in the country; indeed, that any process of breeding and care which showed result in the growth of more than four pounds of wool upon one sheep in the same year must be, of necessity, fraudulent. On the other hand, we hear it said that the buyers combine for the sole purpose of keeping prices at the very lowest ebb.

Some writers are calling upon the producers to hold on to their wool, and not sell or consign it to any men who are guilty of taking part in a scheme to rob them of a just compensation for their products. The strain of talk upon this latter point seems especially sensible, when we remember that most of the wool grown in the country is produced by men who *must* sell at some price, and that urging them to hold on to their wool is equivalent to telling them to put no bread or meat on their table. It sounds well enough, like much talk on other matters, but which is very difficult or impossible to put in practice.

We say we are glad to see this war of words go on, because each party will learn something of the other, and in the end both will be benefited. There have been many hard words said on both sides, and many times utterly without foundation. This is the easiest thing imaginable in all controversies. The weakest man can give hard accusations, and as a general rule this element in a man's writing is a test not less of his strength than of honesty.

Now it is only when we refer all such matters as those above alluded to, to a general principle, that we can get a clear understanding of facts about which fierce and rancorous disputes are carried on.

The simple fact in regard to this whole question of unmerchantable wool is just this and nothing more:—*The producer has put into the market what would bring him the most money.*

When men found that fleeces which contained 60 per cent. of waste matter would sell for the same price per pound as those that only contained 45 or 50 per cent. they made haste to raise them,—that's all. Many a man who has taken the utmost care to have his sheep well and thoroughly washed, and then shorn as soon as well dried, has been compelled to see his wool sold for the same money as another man who has only half washed his flock, and allowed them to run twenty days in a June sun before shearing, because buyers have exercised no discrimination.

The buying of wool has been carried on in such a manner as to encourage the production of large fleeces, large in pounds only, till the natural reaction has taken place, and now the buyers turn round and accuse wool-growers of fraud. If the wool-clip of this country had been purchased on the same principle that regulates the sale of butter and cheese and corn and wheat, or any other production of the farm, we never should have had this low snarling about combined injustice on one part, and cheating and fraud on the other.

If the grain dealers should adopt the practice of paying the same price for wheat that contained 20 per cent. of foul seed that they did for a pure article, the market would soon be filled with that class of dirty grain; and on whose shoulders would rest the blame?

The desired end of all the producer's labor is *money*, and he will always put into the market that which will give him the best return. And when he has obtained 10 per cent. more for his products than they are worth, because it was bought "by rule," does it look like justice, or even common decency, for the buyer to turn round and accuse him of fraud when the purchase was made with open eyes.

When only *wool* was salable, that was the only thing the wool-grower put into the market, that is, wool with its natural and unavoidable amount of waste material; but when it was found that grease and dirt would sell for 45 cents per pound, that commodity was offered in large quantities, and so it will always be, and no conventions or resolutions will ever alter this law of trade.

If, then, the wool-buyer will buy his wool as the grocer buys his butter and cheese, we shall soon find a rivalry among the farmers to produce the *highest priced-wool* as fierce and more lasting than has been the big-fleeced mania. No more fleeces will be found in market containing from two to five pounds of what would be called manure if seen elsewhere, tied up with a quarter of a pound of rope-yarn. There will be no more hard accusations, no more flings about tar and grease. The cloth-maker can have just such wool as he will pay for, and in just the condition he desires. This he may depend upon to the end of time. As soon as he deviates from strict, discriminating justice in his purchases, the producer will be certain to follow his example. It is as natural and inevitable as that the seed should produce its fruit, or the tree its shadow.—*Dr. Henry Boynton, in Mirror and Farmer.*

MUTTON SHEEP.

Dr. Miles, Professor of Agriculture in the Michigan Agricultural College has been making some experiments in feeding grade Merino sheep, grade South Downs, and grade Cotswolds. The Merinos and Cotswolds were lambs, and the South Downs, yearlings. The former two, therefore, give results that are strictly comparative; the latter, not. These grade lambs were from common Merino ewes crossed in the one case with a thoroughbred Vermont Merino ram, and in the other with a thoroughbred Cotswold. "What do you mean?" I asked Prof. Miles, "by common Merino ewes?" "The ordinary kind of sheep in this section, such sheep as could have been bought here last fall for 75c to $1 a head." The lambs were shut up in pens Dec. 13, and were fed corn and clover hay for 23 weeks, or till the 15th of May. At the commencement of the experiment the two grade Merino lambs weighed 125½ pounds, (one 70 pounds, the other 55½ pounds). The two grade Cotswolds weighed 158 pounds, (one 86 pounds, the other 72 pounds.

The Merinos eat 325 pounds of hay, and 249 pounds of corn, and gained 36½ pounds. The Cotswolds eat 398 pounds of hay, and 369 pounds of corn, and gained 67½ pounds. A little figuring will show that it took 1,572 pounds of hay and corn to produce 100 pounds of increase with the Merinos, and only 1,136 pounds with the Cotswolds.

Professor Miles has figured up the amount of food consumed for each 100 pounds of live weight. In the twenty-two weeks, the grade Merinos, for 100 pounds of live weight, eat 231.81 pounds of hay, and 168.13 pounds of corn, and the grade Cotswolds, 212.82 pounds of hay, and 186.43 pounds of corn. The Cotswolds eat more corn and less hay in proportion to live weight than the Merinos; but the total

amount of food consumed in proportion to live weight is almost identical. Thus the Merinos consumed 399.96 pounds, and the Cotswolds 399.25 pounds, or a little over 2½ pounds of food per day for each 100 pounds of live weight.

It is very evident, therefore, that for the production of mutton the grade Cotswolds are far superior to the Merinos. It is equally clear, too, that by the use of thoroughbred Cotswold or South Down rams we can soon get a very useful class of mutton sheep from common Merino flocks. And at present the wool from these grade Cotswolds is worth full as much as ordinary Merino, and a good deal more than that of fleeces which are more than half yolk.—*J. Harris, in American Agriculturist.*

WEANING COLTS.

When a colt is about four months old, if he has had proper care and training, and if the dam is to be used in harness, or if she is breeding again, he is old enough to be weaned. Supposing, as most farmers are obliged to do, that the mare has had to work more or less since dropping her foal, and that the colt has been allowed to follow the dam when at work—the attachment between the two has become very strong. If separated entirely and at once, and if the mare is nervous and high-strung, she will perhaps refuse to work, act frantic, kick and do everything else she ought not, and would not do, but for the separation. On the other hand, put the colt into ever so good a pasture, feed him grain and do everything you may—he will run up and down by the fence—perhaps try to scale it, &c., to get to the dam, until he has run off every bit of flesh on his bones. Now, what's to be done?

We would place the mare in a stall wide enough for her and the colt, then we would halter the colt and tie him so that he could get to the manger but not reach to the teat. It may be necessary also, to change somewhat the halter of the dam, so that she cannot turn sufficiently to allow the colt to suck. Water the colt freely, but the dam as little as possible, for a few days at least, If possible feed the colt a double-handful of oats twice per day for two or three weeks before you attempt the weaning. Increase the quantity of oats a little at weaning time, even if you withdraw the *extra ration* by-and-by.

Standing by the side of his dam he will be more quiet and after a little forget his teat. The mare, also, will leave him more readily in the stable while she labors, especially when she finds him on her return. To facilitate the drying up of the milk in the mare, take a little soft soap and smear it over the udder. It may be necessary to draw out some milk first for a few times, to ease her distress. After a few days, especially if the mare is again breeding, milk will not flow very readily and be diverted naturally to the embryo foal, and, although the mare may call her colt she will refuse to let him suck. If possible, the colt should have the best of pasture and the company of other colts of his own age, and the daily allowance of the oats, or a handful or two of meal mixed with wheat bran should be given every day.

The latter years of our life on the farm, we never allowed the colts to follow to the field, but kept them in a loose box in an underground stable during the day. When the mares came home and were watered at night, the colts were allowed a play spell and also at noon while the dams were feeding. The colts kept in better flesh and gave a great deal less trouble at weaning.—*Rural World.*

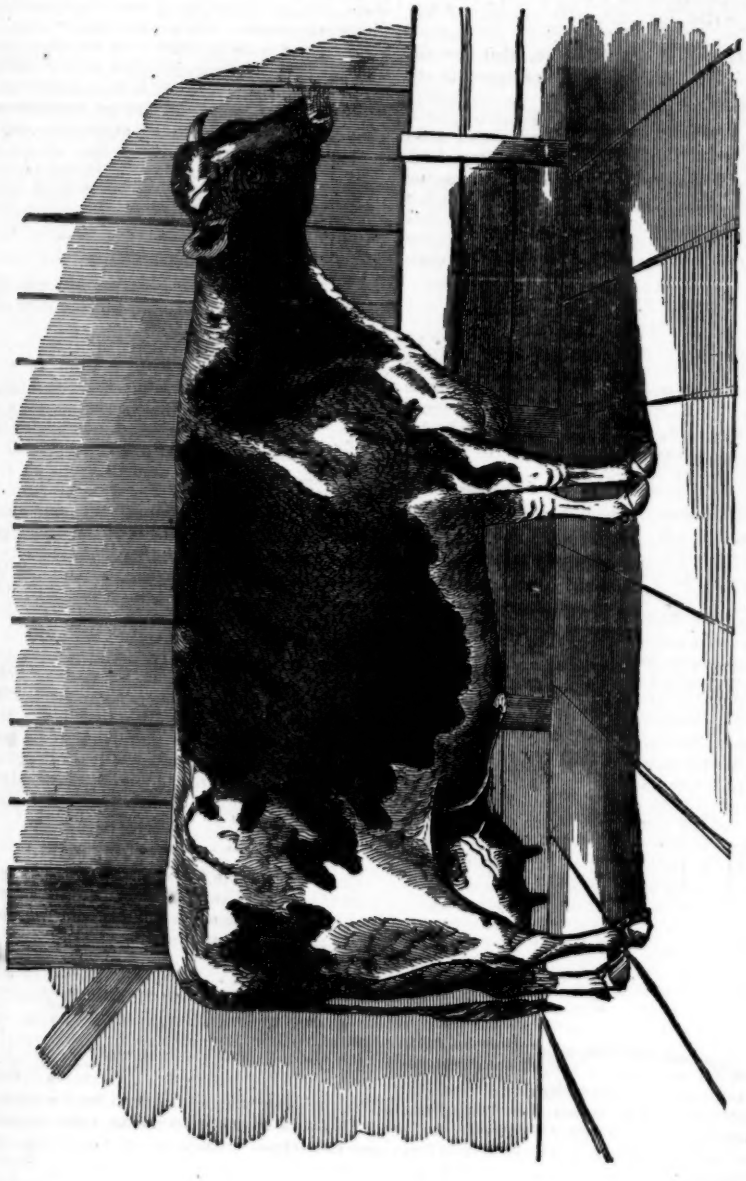
AYRSHIRE CATTLE.

The *Boston Advertiser* gives an account of the attempt to introduce Ayrshire Cattle on Martha's Vineyard, made by the Agricultural Society of the Island some five or six years since, at the suggestion of Sec'y Flint of the Massachusetts Board of Agriculture. In 1863, three Ayrshire bulls were purchased by the Society, and several heifers by individuals. Since then various purchases have been made, a premium of $75 being annually offered for the best Ayrshire bull brought to the Island. There are now, as is stated in a communication from the President of the Society, "twenty-seven head of thoroughbred Ayrshires, while the grades can be counted by hundreds. The cattle have proved hardy, thrifty, and remarkably gentle, while as dairy stock they have answered the most sanguine expectations of the Society. The grades are a marked improvement on the native stock, and partake largely of the excellent qualities of the Ayrshire. So well satisfied are the farmers with this breed that each year witnesses an increasing number of fresh importations, and the herds of mongrel stock are fast disappearing before the thoroughbred and grade Ayrshires."

PEAT ANALYSIS.—Two samples of peat from C. P. Williams' farm, at Charlestown, R. I., have been analyzed at the Harvard Scientific School with the following results:—

	Sample No. 1.	*No.* 2.
Moisture	26.00	26.05
Organic Matter	48 09	46 07
Ammonia	3.12	3.15
Chloride of Sodium	.16	.24
Lime	1.48	1.56
Silica, Alumina, Magnesia, Iron & Loss	20.34	21 85
	100 00	100.00

The analysis shows about six times the amount of ammonia found in common yard manure, and only needs the addition of wood-ashes and bone-dust to make an exceedingly valuable fertilizer. It is strange that farmers will let such mines of wealth lie unused upon their farms. Mr. W. uses about a thousand loads a year, and is bringing up a run-down farm to a high state of fertility.—*American Agriculturist.*



THE HOLSTEIN OR DUTCH CATTLE.

DUTCH CATTLE.

After reviewing the controversies of other writers upon the origin of this breed of cattle, Mr. Allen, in his late book on American Cattle, remarks, "We are content to let the matter rest on the one indisputable fact, that the improved Dutch cattle of the present day, in many of their characteristics, do possess so great a resemblance to the Short-horns, that no wide stretch of imagination need be exercised to *presume* that the progenitors of each—many centuries ago—may have been traced to a common ancestry. In our history of the Short-horns, we have alluded to the probability that they were, at a very early day, originally derived from the neighboring continent; and they may have descended from the same common ancestry to which the present improved breed of Holstein, and Holland, trace their lineage."

Mr. Allen then alludes to importations of these cattle by Hon. Wm. Jarvis of Weathersfield, Vt., and by H. Le Roy, Esq., of New York, as early as 1820, and 1825, which were crossed with the common cattle, but in a few years the pure blood became lost. Of Mr. Chenery's importation he says, "these animals were procured from the best dairy herds in the vicinity of Beemster and Purmurend, in the north Province of North Holland, with a special care to their sanitary condition, and their possession of all the highly esteemed qualities of their race, and are the only *herd* of pure bred Holstein or Dutch cattle known in the country, except their descendants, which may be in some other hands."

"Their *surpassing* excellence appears to be in their milking qualities, coupled with large size, and a compact, massive frame, capable of making good beef; and in the oxen, strong, laboring animals. They are almost invariably black and white in color, spotted, pied, or mottled in picturesque inequalities of proportion over the body. The horn is short, and the hair is short, fine and silky. The lacteal formations in the cows are wonderful, thus giving them their pre-eminence in the dairy.

For the dairy, the qualities of the Holsteins must be acknowledged as remarkable. The Short-horns, as in many instances of trial, have hitherto acknowledged no superior; yet they have now, in these new strangers to our soil, to say the least, found most formidable competitors, and an opportunity is here offered, by those who cultivate them for the dairy, to test their long acknowledged good qualities by comparison. The Holsteins have been long bred and cultivated with a view to develop their lacteal production to the utmost; and that they are quick feeders, and physiologically constituted to turn their food readily to milk, must be evident.

As a beef animal, their merits have been, as yet, but partially tried in the half-breds, or grades from the Holstein bull, on the natives, or other cows of different breeds. So far, however, they are claimed to be satisfactory.

As a working ox, they will probably rank with other heavy cattle of like quality—better in their grades with the lighter or more active breeds, no doubt, than in the thorough breds—as with the Short-horn crosses. We consider Mr. Chenery's importation a decided acquisition to the cattle interests of our country, and trust they will become widely known and distributed."

Our cut represents the imported Holstein or Dutch cow, "Texelaar," imported and owned by Winthrop W. Chenery, Highland Stock Farm, Belmont, Mass. She received the first premium in her class at the fair of the Middlesex Agricultural Society in 1864, and at the Fair of the New England Society in 1865, and won the Sweepstakes—Society's Silver Medal. Mr. Chenery says that "Texelaar" has produced 4018 lbs. 14 oz. milk in nine weeks, or an average of 63 79-100 pounds per day for sixty-three successive days, her largest yield in one day being 76 lbs. 5 oz—over thirty-five quarts.

THE HORSE AT FAIRS.

As we have never assumed the responsibility of doing the thinking for our readers or correspondents, we have no hesitation in publishing the communication of Mr. Lang upon this subject, although we may not assent to all his positions and conclusions.

In objecting to the "trials of speed" at agricultural fairs we do not understand that either Mr. Smith or Mr. Howard would deprive horsemen or horses of their right to the privileges and advantages of the exhibition.

The "agricultural fair" and the "horse-race" are old institutions. Until within a few years past they have been entirely distinct. They have been patronized by different classes. The character of each and of their concomitants have become well defined and clearly understood. The question at issue is upon the union of these two distinct institutions—the "horse-race" and the "agricultural Fair,"—and not upon the exclusion of the breeders of any kind of stock.

We admit that the gentlemen of the horse race show a disposition to be very courteous and accommodating to the managers of the agricultural Fair. They are willing even to abandon their time-honored vernacular, by substituting "horse-fair" for "horse-race," "premium" for "purse," "track" for "race course," &c., &c. Still we frankly confess that we have serious apprehensions that here

are elements that will not blend into a harmonious whole, but that one or the other of the ingredients will predominate, and that the result will be either a horse race or an agricultural fair.

BLACKBERRIES.---MILKROOM.

I think I shall have over a thousand quarts of blackberries this season. But as a distance of 10 miles by wagon and 170 by rail is too far to carry them to market, what shall I do with them? If you advise me to make brandy, wine, jelly or preserves, please send me some reliable receipts, and answer through your paper as *early* as possible.

I have recently come in possession of some land in the west part of this town, and in looking round among over 20 families, I have not seen your paper. Put me down as one of your subscribers, beginning with the number for July 1.

I am about to make some alterations in the house. I would like to know how and where to construct a milk room so that it will answer the purpose the year round. J. S.

Barnard, Vt., July 20, 1868.

REMARKS.—Although we were brought up in a blackberry country, we are sorry to confess that we cannot tell our correspondent how to work up his superabundance of fruit profitably. He and his family are probably as well posted as ourselves in regard to the various domestic uses to which the blackberry is applied. Is it not possible that by the use of modern ventilated crates and baskets, with present high prices, the small fruits may be transported further than they have been in years past? A blackberry syrup, made as follows, is regarded by many as almost a specific for summer complaints:—To two quarts of the juice, add one pound of loaf sugar; half an ounce of nutmegs; half an ounce of cinnamon, pulverized; half ounce cloves, and one-quarter an ounce alspice. Boil all together for a short time, and when cold add a pint of fourth-proof brandy. From a table spoonful to a wine-glass, according to the age of the patient, till relieved, is given.

Your question in relation to the milk-room is one of greater importance than most farmers are aware. The location and size of this important room is too often decided by the arrangement and convenience of other rooms. Generally it is too small, and often it is used for storing other things which affect the air and injure the milk, cream or butter. If people who complain of the great amount of poor butter in the market, were to visit the milk rooms of many farmers, we think the wonder would be rather how their wives contrive to make so much that is fair to good, in such close, narrow and poorly ventilated places as the milk is set in—sometimes immediately adjoining the kitchen, or in cellars far from clean and sweet. In the FARMER for July 18, you will find some valuable hints on this subject by Mrs. L. F., of Fairfax, Vt. In a communication to the FARMER, November, 1866, Mr. A. W. Cheever, of Sheldonville, Mass., one of the most intelligent practical farmers in this State, and one who obtains "fancy prices" for his butter, says that in consequence of making repairs on his milk rooms, he used his dwelling-house cellar for milk during the summer months. Although the windows were kept open for the admission of pure, fresh air, Mr. C. remarked, "I am satisfied I shall not try that experiment again unless I am obliged to. I find I have lost as much as 15 per cent. of the cream by letting it rise in a cold room. Then it takes twice as long to churn sweet cream as it does that which is sour and thick as cream will be if kept in a warm place. Mr. Jason Tower, a very successful butter maker of Franklin, Mass., has kept his milk on the first floor above the cellar all through the hot months for several years past, having a slat floor to allow some circulation of air between this and the cellar room below. He thinks his upper room a little too warm during the hot months of July and August, but he has been able to make a considerably larger amount of butter per cow during the season than I have, although other circumstances do not seem to be much in his favor."

In his work on Milch Cows and Dairy Farming, Mr. Flint says:—"In very large butter-dairies, a building is devoted exclusively to this department. This should be at a short distance from the yard, or place of milking, but no further than is necessary to be removed from all impurities in the air arising from it, and from all low, damp places, subject to disagreeable exhalations. This is of the utmost importance. It should be well ventilated, and kept constantly clean and sweet, by the use of pure water; and especially, if milk is spilled, it should be washed up immediately, with fresh water. No matter if it is but a single drop; if allowed to soak into the floor and sour, it cannot easily be removed, and it is sufficient to taint the air and the milk in the room, though it may not be perceptible to the senses. In smaller dairies, economy dictates

the use of a room in the house; and this, in warm climates, should be on the north side, and used exclusively for this purpose. I have known many to use a room in the cellar as a milk-room; but very few cellars are at all suitable. Most are filled with a great variety of articles which never fail to infect the air."

Will not some of the excellent dairymen or women among the readers of the FARMER, who are satisfied that they have a well-planned milk-room, give our Barnard correspondent and "all other inquiring friends," the information that he seeks, and they need, on this too much neglected apartment of our farm buildings?

IMPORTED STOCK.

We learn by the *Record and Farmer* that Peter Le Clair of Winooski, Vt., has purchased a number of superb imported cattle as follows: one Ayrshire bull, Sir Walter Scott, 35 months old; two 2-year-old Ayrshire heifers; one Ayrshire heifer, one year old; one Ayrshire calf, and a splendid Short-horn Durham bull, sired by the famous "Sweet Meat" Durham bull. The mother and one of the two-year-old heifers were purchased by Mr. Stevenson, editor of the *North British Agriculturist*, of Edinburgh, out of the herd of the late Mr. McFerlande Blairnaraid, one of the most noted stock raisers in Scotland. Mr. Stevenson pronounces the mother to be the best blood in the west of Scotland, and says she could not be matched anywhere.

Within a few months past we have noticed the purchase of several other lots of thoroughbred cattle by the farmers of the rich grazing country of the Champlain Valley, and believe that this section will soon become as distinguished for its cattle as it has long been for its horses and sheep. Indeed, the stock from the "Lake country" is already very popular with the butchers at the Cambridge market.

ONIONS AND ONION SEED.

In an account of the farm of Messrs. S. M. & D. Wells, Weathersfield, Conn., by a correspondent of the New York *Tribune*, we find the following statement of their management of the crop for which Weathersfield has a national reputation.

Beside raising vegetables for home use and green fodder for the cattle, these brothers grow annually two or three acres of the best onion seed in the market. Half a ton to the acre is the expected yield, and it brings from 75 cents to $1.50 per pound. Great success has been attained by them in the culture of this crop. In the first place the soil must be remarkably rich, and the richer the better. If kept at the proper height of fertility repeated crops may be produced on the same ground. The Wells Brothers continue to plant onions in a bed which has been used for the same purpose for at least eighty years, and they have found that the finest and longest-keeping specimens come from the oldest gardens.

Their favorite patch is manured each season at the rate of thirty cart-loads per acre. The soil is not less than a foot in depth. Their practice is, as soon as the frost is out, to use a sub-soiler which goes two feet deep. A little later to put in a plough which goes down about four inches, then make the surface smooth and mellow, and plant as early as possible in rows from eighteen to twenty inches apart. For this purpose the Weathersfield drill is recommended for cheapness and efficiency. The cultivation commences about three weeks after the seed is sown, and one of the great principles is to keep the onions perfectly clean. Generally three times weeding will be sufficient, and the crop need not receive attention after the tops shade the ground. The harvesting is done in September, and the best way is to make heaps of forty or fifty bushels each, covered with straw and leaves in the field for a month or more. Six hundred bushels to the acre is a large return, but under the most favorable circumstances 800 bushels can be produced.

For next year's crop it is well to ridge the ground in the fall, and split the ridges in the spring. For new land the best plan is to begin two years ahead and pave the way with corn, and afterward a crop of potatoes. The best manure is that obtained from cattle stalls. Occasionally, if the young blades look pale, a top-dressing of Phœnix guano may be profitably applied. The surest crop is the red Weathersfield, which is large, hardy and strong. For raising seed the same richness of land is required, and the same strict attention to cultivation. The onions are set as early as possible, in rows, forty inches apart, at the rate of 250 bushels to the acre. They can be freed from weeds by the use of a horse hoe. When the tops are ripe enough they are clipped off, dried under shelter, threshed out, and run through an ordinary fanning mill.

CHAPPED HANDS.—Take three drachms of camphor gum, three do. white beeswax, three do. spermaceti, two ounces olive oil; put them together in a cup upon the stove where they will melt slowly and form a white ointment in a short time. Anoint your hands on going to bed, put on a pair of old gloves, and they will soon be well.

For the New England Farmer.

THE HORSE AT AG'L FAIRS.

MESSRS. EDITORS:—I have read with interest the portion of the essay of John M. Smith, Esq., of Sunderland, Mass., copied in your issue of July 18th, upon Horse Racing at Fairs. The subject of the essay, "*The Management of Agricultural Fairs*," is a fruitful one, and I hope to meet with the work in due time.

I also wish to be allowed to express a doubt as to the propriety of accepting in full the inference to be drawn from the quotations referred to. That trials of speed are liable, and often do, take too prominent a place in the exhibitions of agricultural societies, admits of no doubt, and their regulation requires more judgment and care on the part of the managers of such societies than any other part of the exhibition. Yet I am unwilling to believe that it is best to lay aside these trials because they are sometimes badly managed.

Let the breeder of horses answer the following questions in his own mind.

Will a fast, well trained horse bring a better price in the market than one trained and capable of only ordinary speed?

What difference is there in the market value of two finely formed horses of equally good blood and physical qualifications,—one of good fair gait, and the other capable of great speed?

I think there is no question about the market value of speed, other qualifications being equal. If the faster trained horse brings the highest price in the market, why is it not for the breeder's or trainer's interest to show to the public these characteristics, especially in the representative horses of a breed, just as it is for the interest of the sheep breeder to exhibit his Spanish or French Merino, South Down or Shropshire Down, because the wool or the mutton of these breeds bring more than ill bred sheep?

If the public are to be taxed to raise money for a State to expend in the encouragement of agriculture and agricultural shows, why should not all interests be properly protected,—that of the breeder of horses as well as of the breeder of sheep or cattle?

Very few of the people who cry against trials of speed at agricultural shows are aware of the amount of money invested in horse stock, which is benefited by good training and the trials named. The trials of speed are just as legitimate to show bottom, style of gait and training, to perform in company, as trials of draft are in respect to oxen or team horses, or of horses at the plough or mowing machine.

Were horses only wanted to trot on time, and were their market value as great for that purpose, then the suggestions to that end of Mr. Sanford Howard, in the article referred to, might be of weight.

The same gentleman, (and I have the greatest respect for his opinion,) says: "It must be evident that the offering of premiums for mere speed, if it has any influence at all, tends to the production of horses in which the more useful properties are found in an inferior degree." I grant that trials of speed tend to the production of speed; and when breeders are foolish enough to sacrifice the other "useful properties," it may injure such stock for the road, the plough, or general use. But I must differ from Mr. Howard's premises altogether. There is no need of sacrificing any good quality to add speed and confidence in the noble animal, which he takes on, in these trials, as much as the school boy does in a laudable emulation to excel in his studies by public awards and exhibitions. I should be sorry to mislead any reader, but twenty-five years' of experience in breeding and observation, in which I have endeavored to produce the best animals possible,—combining all the characteristics desirable for the gentleman's horses, leaves me confident that speed can safely be added without injuring the other valuable qualifications. I am fully aware that, to a large class, the fine bay, sixteen-hands carriage-horse is the "sine qua non." To the farmer, the horse of all work, —strong and substantial,—is requisite. By the drayman, the horse that approaches the Clydesdale, Percheron or Norman horse, is chosen. Yet, for all this, high speed, especially if good size and color is added, brings altogether the highest price in market, and suits another class. If, then, speed is demanded, why not train it, show it, encourage it?

Again, Mr. Howard writes: "The green horse of the rural districts, unaccustomed to the strange sights and sounds of such occasions, cannot act naturally, and stands no chance with the trained nags of perhaps lower speed." Then why not train them and accustom them to such "sights and sounds" as they will be obliged to meet all their lives about the cities, where they are most likely to be placed? If a horse is green, let him be placed among his class of green horses, which are of little value until they are trained.

And this brings me to a point which is just what I desire the reader to consider. Twenty years ago, in the State of Maine, the money to be made in the sale of horses or in rearing them, was small in comparison to what is realized at the present time. The reason is obvious. Our best animals, of the incomparable old Messenger stock, went to Boston and New York, where their speed was developed, and where they were sold for five times the amount they brought here. Now, thanks to agricultural societies, any farmer has the privilege of showing his horse and causing him to be trained in the company of others, and to get in his own hands an approximate value of his animal, instead of giving it to outsiders, who will train him to speed.

Again, Mr. Howard writes: "Most persons who have witnessed such contests must have proof that the race is not always to the swift."

I admit this, and feel the annoyance as much as any one, that such exhibitions of speed admit of such chances for deception. That there are many dishonest jockeys, I do not question; nor do I doubt that their action, and that of equally dishonest owners, brings much obloquy upon these trials. Nor do I suppose it can be wholly avoided. Still I do believe there are advantages enough to be derived from speed trials at agricultural meetings, if properly conducted by the managers of such associations, to make the breeding of a fast horse a profitable undertaking, and the occasion a pleasant, proper and profitable one.

And although we are "welcome to the unqualified condemnation" of the editor of the *Canada Farmer* for such trials of speed at our agricultural shows, I cannot believe that such condemnation will frighten the managers of our New England fairs into the adoption of such measures as will dissuade the thousands of farmers and breeders within her limits from demanding a fair and judicious share of the public funds devoted to such fairs for the encouragement of that class of breeding in which they are interested; a claim as equitable as that of the cattle breeder, sheep breeder, and mechanic.

As to "whirly-go-rounds," "side shows," &c., it may be as well to have them inside as outside the grounds, where they have a right, and will attract those who wish to examine. I do not wish to be understood as upholding side shows, unless they are of a proper character for amusement or "instruction." But if they will add to the innocent amusement and instruction of a day or two, and at the same time increase the general fund, I am willing to receive them. And as the public is not forced to sustain them, I doubt not they will suffer them.

According to the statement of our Canadian visitor, who attended the New England show at Concord in 1865, "Nothing was lacking in good order. No intoxicating drinks were allowed to be sold upon the ground, but the objectionable features were trials of speed and side shows." I am aware that trials of speed are not as common in Canada as in the States. But in England, a country that assumes to lead her colonies and the rest of the world, trials of speed are not only occasions of more excitement and interest than all their other exhibitions together, but the staid citizen, the church-goer, and statesman, as well as the tradesman and artisan, make it the occasion of welcome recreation. I have visited the fair grounds of England and France on many occasions of great interest, and may be allowed to say that as far as the morality of such occasions is concerned, I see nothing to make us ashamed of "sober New England."

In conclusion, allow me to express my conviction that the success of agricultural fairs depends upon a judicious unity of all agricultural interests in one show. Catering to the various tastes of all classes, an interested crowd is called out from all departments of life. That there are many who do not care for trials of speed, I do not doubt. There are others who are not interested in swine, cattle or sheep; and others who are not interested in agricultural tools and machinery,—yet each department, well represented, makes an occasion of great interest. Let not the trials of speed overshadow or take too great prominence, but allow them to have such place as shall ensure success; and let the management be such as shall give confidence that the rights of all will be respected and guarded, dishonest jockeys and gamblers notwithstanding. And when such get the reins or on the stand, and it is apparent, let no false delicacy allow them to injure the success of a show.

I cheerfully grant that the great experience of Mr. Howard, and the opinion of our Canadian friend should be fully considered, from their stand point. But let the breeders of horses be heard also.

The New England Agricultural Society has been of the greatest benefit, by stimulating among the people of the New England States a laudable desire to excel in all her varied agricultural interests, and I hope it may not be induced to throw aside its trials for speed; nor can I believe these trials have injured any other interest. Truly yours,

T. S. Lang.

North Vassalboro', Me., July 27, 1868.

For the New England Farmer.

SEEMING INCONGRUITIES.

Said an acquaintance recently, "What is the benefit of continually reading agricultural papers and books, and hearing addresses and discussions, when they contain so much that is contradictory? Some say, phosphate of lime or flour of bone is excellent, indispensable; others declare that equal parts of oyster shells and sand ground together, would produce as much benefit on their land. A few years ago in setting out trees or a vineyard, deep trenching and high manuring were recommended; now it is shallow planting, with little or no manure. One man plants his seed potatoes whole, another cuts them into small pieces, while a third class plant small potatoes, and each claim to have good success. In some localities grass is cut while in bloom, while in others, good farmers say, let it stand until well ripened. Here are some men extolling Jersey cattle, while their neighbors declare they would not farm if they were obliged to keep them. One nurseryman would advise you to buy certain trees or vines; another, only a few miles distant, assures you with equal positiveness that his favorites cannot be surpassed. And so it is, for and against, through all the operations of the farm, and the whole catalogue of fruits and animals. Frequently after searching for information

upon a subject, I am as perplexed and undecided as when I began, and I have almost resolved to discard all reading and advice and rely solely upon my own experience."

Such are no uncommon remarks. And it is not surprising that the mass of diverse and conflicting opinions and statements found in our agricultural periodicals should be a source of bewilderment and discouragement, and that the novice, in his endeavors to learn the truth, is sorely perplexed and often mislead. At first thought, the diffusion of science among the tillers of the soil may seem only to have added confusion to blindness, and to have caused men to take more ultra views and to differ more widely than formerly. Such, however, would be a hasty and unfair conclusion. True science does not thus delude her followers. The apparent want of harmony constitutes no argument against the benefit to be derived from its application to agriculture, nor against book-farming, so called; for men are generally more careful of what they commit to paper, than of their statements in ordinary conversation and discussion. The study of the natural sciences awakens a spirit of investigation, and farmers of the present day are thinking as farmers of no other age have thought. Although the laws of nature applicable to agriculture are plain and simple, yet they cannot be applied with that precision that they can be in the case of the manufacture of cotton cloth or shoes, where a few rules definitely laid down, and all under the control of man, can be observed. In farming every step, every operation, must be modified to suit circumstances; and these ever varying circumstances, under which men act or view a subject, give rise to the great diversity of opinions which unfortunately prove a stumbling block to some.

Massachusetts presents a good illustration of the subject. To one unacquainted with her physical geography, the varied and mixed husbandry here pursued must seem complicated and undesirable, if not unprofitable. He must be not a little puzzled to understand why intelligent cultivators, living in close proximity, should obtain such diverse results, and maintain opinions, and adhere to practices so different. Every theory appears to be rife and to have its supporters; every fruit and vegetable its advocates; every animal its admirers. Yet all this is easily understood when her peculiarities of soil and climate are well known. Probably no other State of its size in the Union contains so many elements which favor a varied husbandry and diversity of practice. Although the extent of latitude is limited, the climatic influences to be taken into account are great. Through the peculiar conformation of the coast, a large portion lies fully exposed to the sea and is tempered by its breezes; while the broken and uneven surface everywhere, gives elevation and depression, aspect and exposure to bleak winds. Add to these the nature of the soil as regards its natural warmth, and humidity of the atmospheres and we have causes fully equivalent to a variation of two or three degrees in latitude. Often killing frosts strike some portions of the farm earlier than other portions. The variety of soil is also great; three and four kinds, each requiring distinct treatment, are frequently found on the same farm. All the various branches of stock farming are successfully pursued within her small limits; the rearing of young, preparing for shambles, keeping cows for butter, for cheese and for milk alone. Thus all the popular breeds find favor in different parts of the State. Certain fruits flourish finely by the sea side which cannot profitably be grown in the middle and western sections of the State. Some succeed better upon our hills than in the valleys or plains. Hence it often happens that men cultivating adjoining lots obtain very different results with the same fruit, and one will condemn what the other praises. I think it safe to say that a larger variety of fruit is raised within her borders than in any other State with the same extent of latitude. With this great variety of soils and crops, whatever may be the season, more than a partial failure rarely occurs.

Thus the seeming incongruities arise from a subject being seen under different circumstances or influences; and if at times men recede from a position which they find is untenable, it only shows they are willing to be taught, and it cannot be inferred from a few retrograde movements that there is not real progress both in the cause and in its followers.

So far, then, from refusing to read or listen to the experience of others, it is all valuable; for in this enlightened age success cannot be ascribed to good luck, to fortune, or to some mystical charm, but is simply conformity to the laws of nature, and failure is the result of non-conformity. Every plant requires just the right kind of soil and atmospheric influence for its successful cultivation, and the profit of any animal depends upon certain conditions which ensure its full development and easy maintenance.

It is the part of science to show the true cause of success and failure, and to shed light where men have hitherto groped in darkness. The enthusiast, stimulated by finely wrought theories, may ride his hobby into ultraism, and the superficialist may send forth his imperfect statements and hastily drawn or forced conclusions to the perplexity of those not well grounded in fundamental principles. But these extravagancies and falacies do not discourage the thorough student of nature, for he quietly discerns between truth and error, and at once seeks to harmonize all apparent discrepancies, knowing that true science can never contradict itself. It is only when men depart from immutable laws, and are guided by their own reasoning and wishes, that their teaching appears incongruous. N. S. T.

Lawrence, Mass., July, 1868.

THE BLUEBERRY.

We have often thought that something might be done in the way of cultivating this useful berry, which can be served upon the table in so many palatable forms. Talking with a farmer from a neighboring town, the other day, we were interested by his experiments in raising blueberries. He commenced by burning over an unproductive field many years ago, and now annually sends to market from three to six thousand boxes. Large numbers go to Boston, and the two principal hotels in this city have taken each seventy-five boxes per day during the season. He burns over his field once in two or three years, and sows each fall two or three bushels of the dried berries.

He pays five cents a box to pickers, and some women earn from $1.00 to $1.25 per day; the berry season is a holiday time with the pickers, and gives the women who spend the rest of the year in sewing for the ready-made clothing dealers, a healthful vacation. Our informant said he had paid $300 a year for the gathering of his blueberry crop, and he found it as profitable as any other crop raised on his large farm. In favorable years, the blueberries had a long season; he had sent them to market as early as the 5th of July, and continued up to the 15th of September.—*Portland Transcript.*

LAMB AND GREEN PEAS.

A few weeks since we published a simple prose statement that the hay seed which was scattered into the wool of some sheep belonging to Robert Batchelder, of Salisbury, N. H., while feeding them in the winter, had sprouted on turning them out in the spring, and the sheep were bearing about with them a crop of grass two inches in length. This story probably reached the poetical editor of the New York *Mail* on one of our late hot days, and this is the way he tells it:

This is the most interesting story that ever we have seen, concerning some New Hampshire sheep who are wearing of the green. 'Twas related by a person on whose honor, we rely, he never hack-ed cherry trees, and—shouldn't tell a lie. Robert Batchelder, this was the shepherd's name, and he pastured twenty-eight sheep on Salisbury plain. But when the leaves had fallen, and November winds were chill, why out on the open wold they couldn't get their fill. So Bobby kindly put them in a well protected shed, with hay enough to feed them, in the mow up over head. And the seed it sifted down and it lodg-ed in their wool, and there it did remain, till the April moon was full. And then out went the mutton, all in the rain, you know, and, in less than twenty-one days, the seed began to grow; and it grew, and it grow-ed like the bean in fairy song, and now the grass upon their backs is more'n two inches long. And, it is expected, that, later in the year, red, fragrant clover blossoms will appear. The moral of this sheep tale is clear to every eye, that by judicious management, if a person cared to try, he might, with little trouble, and with aid of rainy weather, have his lamb and green peas growing up together.

EXTRACTS AND REPLIES.

FALL CATERPILLARS.

Having been a reader of the FARMER for several years, I see you answer all kinds of questions, but I am not sure that one whose schoolhouse was a ship's forecastle, whose pen was a marline-spike, and whose ink-stand was a bucket of slush, will be allowed to "heave up" a query. But I should like to ask how to expel a new sort of web caterpillar, that commences on the ends of the branches of my young orchard?

FAILURE OF SCIONS.

I wish also to ask why scions have not taken as well this year as usual? Did the warm weather that we had in March cause the sap to start too soon?

CANCER IN A COW'S EYE.

Can you or any of your readers tell me what to do for a cow that has a sore in her eye that appears like a cancer? JACK.

East Jay, Me., July 21, 1868.

REMARKS.—A college education, of which our correspondent informs us he is deficient, is not a necessary qualification for admission to our list of correspondents. Nor is it a requisite to usefulness in life generally, however convenient and advantageous it may be to those who possess it. In relation to your web caterpillars, we know of no other way to expel them than to pick off the leaves on which they first appear, or if they get too large a web, cut off the end of the branches to which they are attached, and crush the worms under foot. Undoubtedly you knew that could be done before you asked for an easier way, and perhaps will hardly feel that our advice is worth asking for. We have kept our own trees clear by hand picking; but if any of our readers know of a better way we shall be glad to publish it.

This insect is comparatively new in this section. The first description of it ever published was in the NEW ENGLAND FARMER of August 22, 1828, written by the late Prof. J. W. Harris. He gave it the name of Fall Web-worm. The moths which lay their eggs on the leaves, near the end of a twig, appear in June and July, and the eggs hatch in July and August. The young caterpillars at once begin to build a shelter for themselves, by covering the upper side of the leaf with a web. A labor in which all hands engage. Having erected their tent they feed in company beneath its shelter, devouring only the upper skin and pulpy portion of the leaf, leaving the framework and lower skin of the leaf untouched. As they increase in size

they enlarge their web, carrying it over the next lower leaves, and thus continuing downwards till a large portion of the branch is covered, with a dry, brown and filmy foliage. These caterpillars, when fully grown, measure more than one inch in length; their bodies are slender, very thinly clothed with hairs of a greyish color, intermingled with a few which are black. The general color of the body greenish yellow, dotted with black; there is a broad blackish stripe along the top of the back, and a bright yellow stripe on each side. In September they leave the trees, disperse and wander about, eating such plants as happen to lie in their course, till they have found suitable places of shelter and concealment, where they make their thin and almost transparent cocoons, composed of a slight web of silk intermingled with a few hairs. Here they remain in a crysalis, till transformed to moths, as before stated, in June and July. Such is Mr. Harris's description of what we suppose to be the caterpillar that you wish to expel. Please watch them and let us know whether we are correct in our supposition.

As to the failure of scions, we believe that it has been more difficult to graft apple trees for several years past, than it was formerly. There appears to be less vigor and vitality, or rather, perhaps, a greater want of hardiness in the apple tree than there was when apples were a sure crop. The cause of this general debility is not known. We had not before learned that the present season has been particularly unfavorable. Will others give our correspondent their views on the subject?

Without a more definite statement of the character of the sore on your cow's eye, we cannot venture to offer any opinion as to the proper treatment. We should hope it was not cancerous.

TO PREVENT WINTER KILLING OF STRAWBERRIES.

Will you please inform me through your columns of Extracts and Replies, the best method of preventing strawberry vines from winter killing?
Methuen, Mass., July 22, 1868. E. P. S.

REMARKS.—As a winter protection, as furnishing a clean bed for the fruit, and as a dressing for the soil,—three birds with one stone,—we have applied leaves and woods mould with very satisfactory results. One bed of considerable size thus treated, fruited well for three years, and bore some for a year or two afterwards, by merely pulling up the stronger weeds. In his Small Fruit Culturist, Mr. A. S. Fuller says:—"In many portions of the country a winter protection to strawberry plants is very beneficial, if not positively necessary. Some of our most successful growers in the Northern States never fail to protect their plants, and without doubt they are amply repaid for the expense incurred. For my own part I never have had a full crop without giving protection, and never expect one. The embryo fruit buds are formed within the crown of the plant in autumn, and therefore it must be apparent that sudden transition from heat to severe cold will very much weaken if not wholly destroy them. In sections of the country where the plants are covered with snow during the entire winter, other protection is not so important as where there is little snow, but continued freezing and thawing. It is not expected nor is it desirable to protect the plants so that they shall not be frozen, but merely to shade them, and prevent their being affected by every little change in the weather. A covering of straw, hay, leaves, or any similar material, to the depth of one or two inches will usually be sufficient. Every one ought to know, if he does not, that frozen plants thawed out in the shade are less injured by frost than when fully exposed to the light; and this is another reason why strawberry plants should be covered in winter, because, if the weather should be very changeable, they will be less liable to injury than when fully exposed to light."

SELF-HEAL.—*Prunella Pennsylvanica.*

As the time has arrived when farmers get poisoned with ivy, I send you my remedy, which I have never known to fail in a single instance. It is a plant which grows in all our fields and by our road-sides. I have not learned its name, therefore I enclose a specimen.

The stalks and leaves should be pounded and the juice rubbed on the parts affected.
Maine, July 13, 1868. RICHARD.

REMARKS.—The plant enclosed was recognized by Mr. Joseph Breck, author of the New Book of Flowers, to whom it was shown, as the *Prunella Pennsylvanica* of most botanists, and is familiarly known as "Self-heal" or "All-heal." In Darlington's book on American Weeds and Useful Plants, the name is derived from *Die Braeune* the German word for *quinsy*, for which and for other throat diseases it has been considered a cure, and he spells it "BRUNELLA, *Tournef.*" He says it appears to be distributed over the four quarters of the globe, but he judges it is not a native here. Its ancient reputation for healing wounds, he thinks is not sustained in modern times. We might attempt a description of the plant sent by our correspondent, but as it is somewhat wilted, and as we have no great skill in that line, we copy the rather scientific language of Mr. Darlington, hoping that with the aid of a good dictionary our readers will be able to recognize the plant, if they do not know it by the common names of "Self-heal," or "All-heal."

Stem 8 to 12 or 15 inches high, erect or ascending, somewhat branched, especially at base. *Leaves* 1 to 3 inches long; *petioles* half an inch to 2 inches long (those of the radical or lower leaves often 3 to 4 inches long); the *floral-leaves* bract-like, orbicular-cordate, sessile, with a short abrupt acumination, the lower ones conspicuously acuminate. *Cymules* 3-flowered, crowded into compact imbricated oblong terminal spikes. *Bracteoles* none. *Corolla* violet-purple (rarely pale purple or nearly white), smoothish. Common in fields, roadsides, open woodlands, &c. Flowers from July to September.

Calyx tubular-campanulate, about 10-nerved, reticulately veined, bilabiate,—the upppr lip flat, dilated, truncate, with 3 short-teeth—the lower lip bifid, segments lanceolate. *Carolla* with the upper lip erect, vaulted, entire—the lower lip depending, 3-lobed, middle lobe rounded, concave, crenulate; *tube* a little contracted at throat, inflated below it on the under side, with an *annulus*, or little ring of short hairs or scales, near the base within. *Filaments* 2-toothed at the apex, the lower tooth bearing the *anther*. *Perennials* with few-flowered *cymules* clustered in imbricated spikes or heads.

TRIMMING BOX HEDGES.

What is the best method of propagating, and manner and time of pruning. A. S. B.

Guilford, Vt., 1868.

REMARKS.—The Box is a delicate European shrub, and may be pruned to any shape to please the fancy. Mr. Copeland recommends that they be trimmed in August, that they may make a new growth before winter. It is easily propagated by cuttings, but it is well to protect the young plants in dry weather and in winter by a light mulch. There are several varieties, among which are the Dwarf and Tree Box. It was customary in the old English gardens to clip Box trees into the shape of beasts, birds, and other fantastical forms. In his Book of Flowers, Mr. J. Breck, says:—"I noticed in an old garden, a few miles from Boston, a small parterre, which was laid out in the year 1794; the beds were all edged with box, which had for more than 60 years, been regularly trimmed. The edging was about six inches thick, and at least four feet high. The sides were smooth and the top even, without any break in the foliage from the ground to the top. Great attention had been given it by the old lady who was in possession, that it might remain as it was at the time of her husband's decease, many years before. The beds of various shapes were small, so that no plants could flourish, and the only thing of interest about this strange arrangement was, as a relic of olden time. If Box is used for edging, it should, in all cases, be kept low, by regular trimming every year, and kept down to the height of not more than four or five inches; and when it becomes too thick, should be taken up and re-set."

POTATO SLUGS.

Seeing in the papers of the day frequent reference to the potato bug, which has vexed the western fields, I would like to inquire through your paper, whether the depredations in our vicinity are the same. For several weeks the potato vines about here have been infested with something which seemed to be either a bug or a slug without wings, of a yellowish brown, very slow of motion, many of them with apparently excresences or bunches of a dark green color on their backs, which seemed to me to be the germ or egg of a second crop of the same disgusting things. As far as my observations have extended, they have chiefly confined their ravages to the Sebec potatoes, a car load of which was sold here last spring for planting. Perhaps these are more susceptible to disease, being very early and delicate. I noticed that these potatoes had the appearance of being diseased before planting, and it may be that to them we shall be indebted for another enemy. I have seen no potatoes of this variety that were not attacked by these bugs. The vines themselves seem to show the effects of their work in different ways, some hills appearing to have stopped growing and to be diminishing in size; others falling down wilted and decayed, and most of them having very much the appearance that they had when the potato rot was prevalent, with the addition that the ends of the vines are eaten off. Since writing the above, I find that my Orono potatoes are affected slightly in the same way, but not seriously as yet. Can you give us a description of the potato-bug, or tell whether this is the same? W. P. L.

Newburyport, Mass., July, 1868.

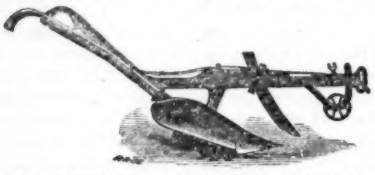
REMARKS.—The "disgusting things" which infest your potato vines are a very different beetle from that which is making such fearful havoc in the western fields.

Yours is the three-lined leaf-beetle, *Crioceris trilineata*, of which Mr. Harris gives the following description and history. "This beetle is about one quarter of an inch long, of a rusty buff or nankin-yellow color, with two black dots on the thorax, and three black stripes on the back, namely, one on the outer side of each wing-cover, and one in the middle on the inner edges of the same; the antennæ (except the first joint,) the outside of the shins, and the feet are dusky. The thorax is abruptly narrowed or pinched in on the middle of each side. When held between the fingers, these insects making a creaking sound like the Capricorn-beetles. They appear early in June on the leaves of the potato vines, having at that time recently come out of the ground, where they pass the winter in the pupa state. They eat the leaves of the potato, gnawing large and irregular holes through them; and, in the course of a few days, begin to lay their oblong oval golden yellow eggs, which are glued to the leaves, in parcels of six or eight together. The grubs, which are hatched in about a fortnight afterwards, are of a dirty yellowish or ashen white color, with a darker colored head, and two dark spots on the top of the first ring. They are rather short, approaching to a cylindrical form, but thickest in the middle, and have six legs, arranged in pairs beneath the first three rings. After making a hearty meal upon the leaves of the potato, they cover themselves with their own filth. The vent is situated on the upper side of the last ring, so that their dung falls upon their backs, and, by motions of the body, is pushed forwards, as fast as it accumulates, towards the head, until the whole of the back is entirely coated with it. This covering shelters their soft and tender bodies from the heat of the sun, and probably serves to secure them from the attacks of their enemies. When it becomes too heavy or too dry, it is thrown off, but replaced again by a fresh coat in the course of a few hours. In eating, the grubs move backwards, never devouring the portion of the leaf immediately before the head, but that which lies under it. Their numbers are sometimes

very great, and the leaves are then covered and nearly consumed by these filthy insects. When about fifteen days old they throw off their loads, creep down the plant, and bury themselves in the ground. Here each one forms for itself a little cell of earth, cemented and varnished within by a gummy fluid discharged from its mouth, and when this is done, it changes to a pupa. In about a fortnight more the insect throws off its pupa skin, breaks open its earthen cell, and crawls out of the ground. The beetles come out towards the end of July or early in August, and lay their eggs for a second brood of grubs. The latter come to their growth and go into the ground in the autumn, and remain there in the pupa form during the winter."

FALL PLOUGHING.

In connection with an article on this subject in another column, we wish here to direct attention to a series of ploughs which are adapted to all soils. We allude to Holbrook's National Prize Medal Ploughs, one of which is represented by the cut.



These ploughs do a quality of work which no skill in spading can equal. Six sizes are made. Four of the large sizes are arranged for two mould boards—one for sod and one for stubble ploughing. A skim or forward plough can also be attached to either of these large sizes for "Michigan," or sod and sub-soil ploughing. They are manufactured and sold by F. F. Holbrook & Small, 10 South Market Street, Boston.

MAKING PICKLES.—CANNING TOMATOES AND CORN.

Please inform me, if possible, through your paper, how cucumbers are pickled for market, also how tomatoes and green corn are canned in tin cans, and oblige SUBSCRIBER.

Shelburne, July 30, 1868.

REMARKS.—Large space would be required for full answers to these short questions. As to pickles for market we believe they are generally preserved in salt, and then put into vinegar. We will try soon to get a full account of the process from some of the pickle-makers in this vicinity. In the mean time we copy the following from the *Country Gentleman:* They should be one-third grown. Cut them off with scissors, leaving about half an inch of stem—if cut with a knife it will displace the vines, and if pulled off by hand, a small torn place will be made, where decay will commence. Wash or rinse each one in a vessel of water, and without wiping, lay it in the tub, cask or jar, intended for the cucumbers. Put in just enough salt to imbed them without interstices. The water on them will make a strong brine, or rather mixture of brine and salt, in which they will keep months and years, and in this state they are sold. They are afterwards make into pickles. Many, however, who raise cucumbers sell them in the city as they are picked from the vines.

As to canning corn, we believe that the drying process described in another column will be found the safest, surest and easiest.

The canning of tomatoes is done by scalding and peeling the tomatoes, throwing them into a kettle,—iron will do if not rusty—bringing them to a boil and allowing them to remain about five minutes; then take the kettle off the fire, fill up the cans and solder on the caps. That's all. But how many fail in their attempts at canning? And why? Simply because they don't understand the trade. It is very easy to tell on paper how to make good butter, but not quite so easy to learn. In the first place, good tight cans are essential. If there is any defect here, the labor is lost. Then the proper cooking, heating, filling, &c., are conditions that imply skill and experience. And lastly comes in play the exercise of the art and mystery of the tinker's profession. How many cans of fruit have been lost by imperfect soldering! After the soldering iron, the solder, the rosin, &c., are all made ready, the following directions for doing the work are given, by a correspondent of the *Country Gentleman*:—"In filling up the cans, if any of the juice is spilled into the gutter wipe it out with a dry cloth. Having adjusted the cap, sprinkle a little powdered rosin around the edges; then taking the hot iron drop three or four little globules of melted solder around the gutter and pass the iron around till all is fast. The heat of the iron, together with the hot tomato, will cause a considerable escape of steam during the process, and if it has to force its way out under the edge of of the cap, it will be difficult to make the solder stick. It is best, therefore, to punch a hole in the centre of the cap for the escape of the steam. The hole can be stopped by a drop of solder after all is tight around the edge."

MILDEW ON GOOSEBERRIES.—TRIMMING WHITE PINE GROVES.

Can you give any remedy for mildew on gooseberries? What is the best time for pruning white pine groves? A. S. B.

Guilford, Vt., 1868.

REMARKS.—As the gooseberry in this climate suffers from heat and drought, the cultivator should guard against their effects, by choosing a cool, moist soil, by deep cultivation,—some say two spades,—and by thick mulching. A writer in the New York *Horticulturist* planted in rows three-and a-half feet apart each way and trimmed to single stems. Early in November, after pruning the plants and dressing the borders—digging in plenty of stable manure,—he hauled several loads of tan and covered the bed six inches thick, and there it remained all winter and "still remains." The re-

sult was the healthiest bushes and the finest fruit he ever saw. The north side of a fence,—all the better if whitewashed,—is considered a good location. Mr. Cole recommended salt hay, sea weed or any other litter, for mulch, with two quarts of salt to a square rod, around the bushes. Lime and sulphur incorporated into the surface soil are said by some to be good against mildew. A slight sprinkling of wood ashes on the young leaves is also thought to be beneficial.

At page 82 of the present volume of the MONTHLY FARMER you will find a practical article by B. F. Cutter, of Pelham, N. H., a gentleman of large experience and extensive observation. He would trim while the circulation of the tree is comparatively dormant, say from November to February. Mr. Cutter's article appeared in the WEEKLY FARMER of December 28, 1867.

CURRANT WORMS.—TRANSPLANTING AND SOIL FOR CURRANT BUSHES.

I have some currant bushes, which have been rather neglected, and this summer there suddenly appeared a formidable army of currant worms. I at once applied a mixture of lime, wood ashes, and plaster, as recommended in the FARMER, with perfect success. One thorough application routed the main body, and a second dose disgusted the most inveterate lover of "greens," in the shape of currant leaves, and sent them probably where the NEW ENGLAND FARMER, with its timely suggestions, is not found.

Will not removing the old wood, dividing the roots, and transplanting to a new place, tend to keep them free from this pest, and also improve the fruit in size and flavor? When is the best time to do this, and in what kind of soil do they thrive best? RUSTICUS.

Southboro', Mass., Aug. 3, 1868.

REMARKS.—The currant being very hardy grows in almost any soil and under almost all circumstances. But it does best in a rather heavy, deep and rich soil, and with good cultivation. If transplanted, as you propose, in the fall, they may bear some next season. Cuttings, although they will not bear as soon as those transplanted, are preferred by some. Suppose you try both plans for an experiment. Cuttings may be put in the ground either in the fall or spring. If set in the fall, cover with straw or other mulch, which may be removed in the spring. Take good strong branches of this year's growth, six or eight inches long, cutting them smooth just below a bud.

COTTED OR FELTED WOOL.

An "Old Subscriber" inquires in the FARMER of August 1, the cause of matted or felted wool. Having often thought of this subject when shearing the few specimens I have met in taking off more than a thousand fleeces, I respond by giving my opinion.

It is caused by a lack of oil or yolk in the wool; a secretion that shows itself plainly on those sheep whose wool is most valuable for felting purposes, as the merinos, and appears less as the wool is coarser, and almost disappears in wool that approximates to hair. If the sheep, either from sickness or poor feed, has during the growth of the fleece, ceased to secrete yolk or oil, the wool, becomes dry, and the friction of the wool as the sheep moves about among the flock, as it feeds from the rack, and, if it is afflicted with ticks, as it rubs itself against the wall or fence, causes the wool to felt. It is said that every fibre of felting wool has minute hooks upon its surface, visible through a microscope, that interlock, or catch together, in the felting process. When there is abundance of yolk in the wool these fibres do not entangle as the sheep moves its head from side to side, or as it presses its way among the flock. Besides sickness and poverty, there is sometimes another cause. A heavy drenching rain or a thorough washing will take out this yolk, and if followed by cool weather, the wool will sometimes, though rarely, dry so as to felt on a fat sheep.

Usually at shearing time, say the middle of June, the sheep has begun to gain, and the wool begun to grow, so there is loose natural wool, a quarter of an inch long, under the matted fleece. It is fortunate for the sheep and the shearer when this is so, for to cut through a cotted fleece is a work requiring patience and time. To avoid raising such wool, keep the sheep fat or thriving, then the wool will grow continuously and not felt.

Wool sometimes looks yellow when it is not cotted, and buyers dislike it. This yellow appearance is sometimes caused by imperfect or superficial washing. The wool is so saturated with water that the yolk and dirt are all afloat among it, but instead of continuing the washing till these are removed, the sheep is let loose and the dirt settles to the skin, which causes the fleece to appear worse than if unwashed. The yellowness is sometimes in stripes down the sides, although water had soaked through the wool and run down on the body. But all yellowness in the wool cannot be accounted for in this way. Some sheep kept well sheltered and unwashed will shear beautiful white wool, while other sheep in the same flock have fleeces very yellow. I cannot explain this.

Irasburg, Vt., Aug. 3, 1868. Z. E. J.

A FUNNY NOTION

Of some people is, that editors are so excessively belligerent that a very slight rubbing of their ears is sufficient to engage them in any quarrel. A correspondent, who has not pluck enough to write his own name, wishes us to publish "in good shape" certain accusations against certain tavern keepers for exorbitant charges. If our friend was green enough to pay double price for a "breakfast and horse-baiting" we should feel inclined to "pitch into" him, rather than attempt to disfigure the "mug" of one who holds that a thing is worth all it will fetch, were we disposed to shake our "death maul" in the face of either party. But we don't train under any captain that is ashamed of his flag.

Moral.—Don't write anonymous communications.

DRIED GREEN CORN.

A lady whom we regard as one of our best neighbors and as a model house-keeper, remarked to us the other day, that she had never seen her process of preserving sweet corn for winter given among the cooking receipts which she had read in the FARMER or in other papers, and that she thought it was not so gener-

ally known as it ought to be. She remarked that her family were quite fond of it, and would be very unwilling to do without it, when fresh vegetable food is as scarce as it generally is during our long winter season. Late in the season when sweet corn becomes plenty, she boils a kettle full at once, cooking it just as for table use. The kernels are then cut from the cob, placed on tins, and dried by the stove. It might be dried in the sun, but as her cooking stove furnishes good conveniences, she has never tried that plan. When sufficiently dry it is tied up in cloth bags, to keep out insects, &c., and kept in a dry place.

To prepare it for breakfast, if she has plenty of milk and thinks there is no danger of its souring, the corn is soaked over night in cold milk. But if there is danger of the milk souring it may be heated before being pouring upon the corn. If milk is scarce, the corn may be soaked in milk and water, or even in clear water. Milk, however, adds much to its palatableness. In the morning, it is put upon the stove and warmed and then buttered and salted to taste. In her family, she says it is as much the standard dish for Sunday breakfast, as pork and beans ever were for dinner. It is also often called for, and always welcomed as a luxury, at other meals.

For the New England Farmer.

FALL PLOUGHING.

Without elaborating the many strong points in favor of Fall Ploughing, a few of the more prominent benefits may be briefly stated as follows:—

1. August and September is a good time to turn over bound-out sod land and manure and re-seed it at once to grass, obtaining a crop of hay the following year.

2. October and November is an excellent time to break up sod land for planting the following spring.

3. The weather is then cool and bracing and the team strong and hearty for the work; while the weather in the spring is more relaxing and team less able; and spring work being always hurrying, it saves time to despatch as much of the ploughing as possible during the previous autumn.

4. Sod land broken up late in autumn will be quite free from growing grass the following spring; the roots of the late overturned sward being so generally killed by the immediately succeeding winter that not much grass will readily start in spring.

5. The frosts of winter disintegrate the ploughed land, so that it readily crumbles in fine particles in spring, and a deep, mellow seed-bed is easily made. The chemical changes and modifications resulting from atmospheric action during the winter, develop latent fertility in the upturned furrows, which, together with the mellowing influences, materially increase the crop.

6. Most kinds of insects are either wholly destroyed, or their depredations materially checked, by late fall ploughing, especially the common white grub and the cut worm.

7. Corn stubble land may be ploughed late in the fall, and thus be all ready for very early sowing in spring, thereby going far to insure a good catch of grass; the roots of the new seeding getting hold well, or being well established, before the droughts of summer come on.

8. Most land in New England needs deeper ploughing than has generally been practiced. Where the subsoil is fine grained, and unctuous, and close, or where there is a hard pan of good quality, deep ploughing may be at once resorted to, with decided advantage. Where the subsoil is poorer, the ploughing may still be advantageously deepened by degrees, say an inch at each new breaking up. But in by far a majority of cases, deep ploughing may be practiced at once—indeed it may be the *rule*, with safety, while shallow ploughing may be the *exception*. Plough say nine, ten, eleven or twelve inches in November. The subsoil turned up will grow several shades darker by spring. The frosts and atmospheric influences of winter will mellow the soil. The inorganic elements and all latent fertility will be made more active for benefiting the crop. In spring spread the manure and plough it in or otherwise work it in or mingle it with the soil to the depth, say of four inches, or a little more or less, and you have the very best attainable conditions for realizing good crops. Deeper ploughing may thus be practiced than would at all times be safe or expedient, if the ploughing is delayed till spring. H. F.

August, 1868.

TROTTING HORSES IN MICHIGAN.—The President of the Michigan State Board of Agriculture, in his Address to the members of the executive committee at their annual meeting in Detroit, makes the following remarks on this subject:—

"The desire to breed fast running, and fancy trotting horses, without regard to other qualities, has had the effect of lessening the value, and lowering the standard of horses in this State. In my opinion, we should encourage the introduction of horses of fair size, weight and action that are so desirable in the first class carriage horse."

—The Marshall, Iowa, *Times*, speaks of one farmer in that section who has 120 acres, and of another who has 40 acres in white beans.

Ladies' Department.

DOMESTIC ECONOMY;

OR,

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER XIV.

FOOD AND ITS PREPARATION.

To say that the happiness of a household depends largely upon the diet of its members, may seem a strange assertion to some of my readers; but those who have noticed the dejected countenances, no less than the feeble frames, of dyspeptics, have heard from these victims of indigestion querulous accounts of the effects of innutritious and unwholesome food, or have themselves experienced the inertia, the stupidity, the melancholy, resulting from a thoughtless choice of viands, or the mistakes or misfortunes of the cook, will be ready to acknowledge that improper food affects the mind as well as the body. And those who are observant of such matters will be quick to see that the vivacity, the cheerfulness, and the hopeful enthusiasm that are needed to carry us easily along the rough and uncertain paths of daily toil and trouble, are more frequently helped and promoted by the elevated tone of the system induced by a wise regimen of food for the body, than by any mental bias or moral discipline.

But nothing save close attention and careful practice can qualify any one to furnish the table with nice and at the same time healthful and economical dishes. And while all housewives are aware how important is the duty of preparing and providing proper and palatable food for the family, they know well how difficult and unsatisfactory the work is,—there are so many variable appetites, and such a diversity of tastes, to cater for: no wonder that blunders are made, and waste incurred in attempting to suit them all, and the strength and patience of many a good woman exhausted—to say nothing of her regrets for misused time. Hoping to obviate these defects, or to expedite or simplify her labors, every housekeeper is eager to avail herself of the experience of others in these matters, so that the cookery-book and the thousand and one receipts of ladies' magazines and albums are in constant requisition. But these are daily receiving additions from the fastidious and the whimsical, and young housekeepers, instead of gaining help from them, are too often bewildered and perplexed by their elaborate rules, and in following them find the labors of the kitchen increased and their ideas of economy set at defiance.

The truth is Americans cook too much. Everything that we eat must be baked, boiled, stewed, or fried,—sometimes served in all these ways,—or disguised with spice, grease, or sugar, till the most nutritious qualities of all articles that come under the head of food are either lost or changed into something deleterious. If a reform in this could be effected not only would our dyspeptic friends soon regain health, and vigor, but hours and hours now spent by the overtasked and anxious housewife, in great discomfort, by the side of blazing ovens, and over scorching and steaming ranges and stoves, would be redeemed for loftier purposes.

The readiest way to bring about such a change is, undoubtedly, to bring up children on plain, wholesome fare; keeping their natural taste for such food clean and hearty, by allowing them a reasonable variety. Give them different kinds of good, light bread, with plenty of fruit, fully ripe,—either in its natural state or now and then simply stewed or baked,—honey, or maple syrup, and they will never want rich cake or pies or preserves. Pickles, "the Yankees' sweetmeats," forbid, as if they were poison. Fresh vegetables, too, boiled, or baked, with only the seasoning of a little salt, or a trifle of nice butter, and a moderate quantity of good, but simply cooked, animal food; plain broths, or soups, in plenty, but not gravies nor sauces; puddings, also,—light and good—not rich. All these things children like, and they are healthful. A little plain cake or gingerbread occasionally does not come amiss, to be sure,—and is not to be censured—so far as health is concerned. Still, fruit is far preferable; and is, in the end, more economical, when we take into consideration the time and strength of the housewife. Its free use affords her great relief from anxious and wearisome labor, and its nutritive qualities being so high—superior to many kinds of animal food—it ought to be considered as much a regular article of diet as bread—no meal should be deemed complete without it. Those who are in the habit of loading their stomachs with cake and pastry, have no idea of the refreshment afforded even by so simple a repast as good bread and well-ripened apples or pears, peeled and sliced-tomatoes, peaches, cherries, currants, and all sorts of berries, are most delicious accompaniments to the bread; eaten raw, with the addition of sugar, if you choose,—and form a dish fit to set before a king.

People are beginning to see the value of fruit for this purpose. When it is considered an indispensable article of daily fare, one strong chain of woman's servitude—in the shape of cake and pastry making—will be broken. Till then we must have the old recipes of butter and sugar and spices and eggs, with their bewilderments of weights, and measures, and "thingfuls;" and aching arms and shoulders and wrists, from pounding, and crushing, and sifting, and beating, and whisking, and

stirring. So these papers on cookery must include directions for these things. But we will begin with the most important of all food, *bread.*

In the outset let me say, *it is always the best economy to cook well!* and no good cooking can be accomplished without good materials. Inferior, impure, unripe, carelessly prepared, or too long kept groceries, besides trying the patience of both cook and consumer, are neither nutritious nor healthy;—get only the best. These are not always the highest priced. Fancy names or brands and showy wrappings cost high, and too often help to sell a poor article; avoid them,—look for less pretentious things, and when you have found the right quality of goods, note its peculiarities and be satisfied with nothing else in all future purchases.

Don't buy new preparations unless you have full confidence in those who recommend them.

Having chosen your groceries well, keep and use them with care and prudence. "A place for everything and everything in its place," important rule as it is for every room in the house, is doubly so for the store room and kitchen. No little waste is occasioned, even by good managers, by carelessness here. Be sure that salt or sugar is not suffered to remain in a damp closet; spices, seasoning herbs, tea or coffee, uncovered, or in the glaring sunlight; lard, butter, cheese, molasses, or syrup in the heat; flour, meal, rice, sago, and such, things, neither in heat nor dampness. See also that all kitchen ware and utensils are made clean after usage and placed so as to keep so till wanted again.

Use crockery or stone ware for mixing or for holding food; it is stronger than potter's ware, and there is no danger of poison from the glazing, as there is in that. Iron stew-pans and kettles are better than copper or brass; in fact, copper and brass are so difficult to keep from canker—which is poisonous—that they ought to be banished from the kitchen. Nothing is so good, however, as the yellow crockery, or the porcelain-lined cast-iron ware for stewing and boiling; sheet-iron, if tinned, or the common tin ware, gives a disagreeable flavor to acids, though it answers for other things, and is very suitable for baking pans. Keep wooden utensils where they are not damp, nor yet warped with the heat. Keep butter and lard either in stone pots or oaken firkins—pine imparts its flavor to such things, and the glazed ware gets saturated and rancid with them. Bread retains its moisture and sweetness in stone pots, or closely covered tinned ware—stone is best.

Raised or leavened bread is in most common use. Unleavened, or quickly raised bread, is convenient at times. This comes under the head of johnny—more properly *journey*—cakes. The name is said to have been given them from their resemblance to the unleavened bread of the Jews, which is still used by them in commemorating their hasty departure out of Egypt before their long journeyings in the wilderness. It is the only kind of bread in use at the present day among wandering tribes and half-civilized nations of Asia and Africa; among the gipsies also of Southern Europe and the peasantry. It is merely pounded or coarsely ground wheat, millet, or barley, mixed with water, and baked flat and thin in their rude ovens of heated stones. From these came the black bread of Prussia, Sweden, and France; the bannocks and oatcakes of Scotland; the hoe cakes of our Southern States, and our Yankee fire-cakes and johnny-cakes; which are made of scalded Indian meal, sometimes of Indian and rye, or of wheat—meal or flour—with occasionally a little saleratus as a slight leavening power, and, for a change, a small quantity of shortening—cream or lard,—and as a luxury a spoonful or two of molasses, when a sweet cake is desired. These are baked—the hoe cakes upon the metal of a clean hoe, in front of blazing pine logs; the johnny cakes before a clear fire, on a piece of board or the gingerbread-tin of the farmer's wife; the fire cakes in the old-fashioned Dutch oven, hung over glowing embers,—the lid or cover of the *kettle* called *oven*, holding hot ashes and coals so that both sides of the cake are baked at once; a great improvement this upon the turning and slipping of hoe and johnny cakes to finish the work.

Since the general use of stoves some persons, intent on keeping up old names, make what they call johnny-cakes, delicate mixtures of superfine meal, and flour, and milk, and eggs, and shortening, and spice, and cream, and—I dare not enumerate all the other "ingrejiencies," as the old cook calls them in Douglas Jerrold's story, where, in her potato pudding, one potato did service with dozens of eggs and bottles of wine; this new-fashioned johnny cake being something after that style—and these are baked in the stove oven, and because of the name considered simple and wholesome. *Economical* they certainly are not, either in cost of original materials, in cost of time for compounding them, or cost of money for medicines to correct indigestion—which surely follows their consumption. Let us reject such things, libels as they are on good, healthful, substantial food, and if we do not care for the real, old-fashioned johnny cake take the modern biscuits when leavened bread is not available.

Leavened bread pre-supposes a raising power,—yeart, barm, or emptyings, as it is called in its liquid state—turn-pikes, yeast cakes, or yeast flour, in its concentrated and dry form. The dry, or hard yeast, is the most economical, and can be kept much longer than the liquid. To make this, put six quarts of cold water to a quarter of a pound of hops and two cups of wheat or Indian bran, and boil it till there is left but three quarts. Strain the liquid, while boiling hot, upon four cups of flour, with which has been mixed a tablespoonful of salt, in a wooden vessel. When it is cool, add to it a pint of barm, or liquid yeast, or two yeast cakes broken up. Keep it in a warm place, and the next day, if it foams strongly thicken it with Indian meal till it can be moulded with the hands. Then roll it into sheets a quarter of an

inch thick, and cut it in squares of one and one-half inch. Spread these on a table in the sunshine where there is plenty of air, turn them every morning till they are perfectly dry, then pack them in boxes, away from heat and dampness. Some persons break these cakes and keep them thus, in the form of meal or yeast flour, but they retain their virtue better packed whole.

Six hours before you wish to make bread take one of these squares and dissolve it in a pint of lukewarm water; afterward stir in flour enough to make a batter, and set the mixture in a warm place. At the same time sift your flour for the bread; and keep it in a broad pan, in the sunshine, or by the fire, till the yeast is foaming highly. Then take for six loaves—a foot long, four inches wide, and five inches thick when baked—two quarts of flour, to which has been added an even teaspoonful of salt, twice that quantity of lard and two even tablespoonfuls of sugar. Pour upon this slowly, stirring it constantly—so that it shall be smooth—two quarts of boiling water. Let it set till cool; if the flour swells so that it is stiff, add warm water till it is of the consistency of batter. Pour in your yeast, and thicken with flour till it is as stiff as you can mould it with your hands. Cover it with a deep pan, throw a cloth over it, and set it in a warm place. If made in the evening it will be ready to bake in the morning.

Brick, or house ovens, vary so much in size and capacity for retaining heat that it is impossible to give any definite rule for heating them; but to bake bread well, hard wood should be used,—and the same for meat, beans, and thick loaf-cake—soft wood answers very well for everything else. The ovens of stoves and ranges should be hot enough to hiss loudly at a sprinkling of water if bread is to be baked, and the heat kept up till it is done; for loaves of the size mentioned above, this will be one hour. If the bread scorches, set a pan of cold water with it, or lay clean paper over the loaves.

Two hours before you intend to bake your bread you must begin to knead it. If it has stood long enough to get "changed"—has lost its sweetness—mix a teaspoonful of saleratus in a cup of warm water, and work it into the dough,—generally it will need but half that quantity. Then take a chopping knife, or a sharp case knife, and give the dough a great many cuts with your right hand, while you roll and pull and press it with your left. Continue this for half an hour, occasionally changing hands,—for it is tiresome work to keep up one movement with the right hand so long; then shake a little flour upon your moulding board, and there cut and chop each loaf as you mould it for its pan—at least five minutes. Have your pans well greased with lard or nice beef fat. Let the loaves rise till they are very light, setting them near the fire for this purpose; then prick them in three or four places, rub them over lightly with lard, and sprinkle cold water upon them and place them in the oven. At the end of an hour—or just before,—prick them deeply with a broom-straw;—if no dough adheres to the straw the bread is done. Stand the loaves on end, and throw a dry cloth over them,—if they have had a very hard bake dampen the cloth. After two hours set them in an airy place till they are thoroughly cold, (having removed the cloth,) and, finally, shut them from the air in stone or tin vessels. Never *keep* bread wrapped in cloth, damp, or dry. When bread becomes stale dip the loaf in cold water for half a minute, and place it in the oven, between two pans, that it may be entirely covered—for half an hour;—it will then be as moist as new bread; buns, gingerbread, and sponge cake may be renewed in the same way. (A few words ought to have been said about choosing flour: Good flour when held tightly in the hand is easily compressed into shape, dough made of it works clean in kneading, and is elastic and buoyant.)

To make brown bread: for one large deep loaf take two quarts of Indian meal and one of rye, two tablespoonfuls of molasses, a large pinch of salt, a small teaspoonful of saleratus or soda, and water as hot as your hand will bear. Mix it with a spoon till it is all alike, and add a tablespoonful of yeast, or a piece of white bread dough as large as a teacup; make it as stiff as you can stir it, pour it into a well-greased cast-iron pan, smooth the top with a knife, and cut two gashes across it; set it in a warm place for four hours, then sprinkle the top plentifully with water, and bake it eight hours,—it is very nice steamed in a tin pudding-pan in the dinner boiler for the same time. A quart of boiled squash or pumpkin if mixed with the dough improves it, or the water in which these vegetables and green corn are boiled. Thirded bread, using flour, rye, and Indian,—and making in the same way, is very nice.

Wheat bread should be in every family. It is best when new, though it is quite palatable when wet and re-baked, as mentioned above. For this, take one quart of wheat meal—unbolted—a pinch of salt, quarter of a yeast cake dissolved in warm water, and if you please a tablespoonful of sugar—it is good enough without it, though; mix it as stiff as you can stir it, with warm water; let it rise over night; mould it with water into flat pans, and bake it fifteen minutes in a brisk oven. Small loaves or cakes are best. Tear them open when eaten—cutting makes them heavy. In making any of these varieties of bread, milk may be substituted for water, but it requires longer time for rising, though the bread is more tender for its use.

Butter-milk, or sour-milk, makes nice bread or biscuits if used when new,—it is very unhealthy after standing a few days. No one who has examined it with a microscope at the end of that time would ever wish to touch it. Take a quart of flour, sift into it a teaspoonful of salt and the same quantity of cream-tartar, then rub in a tablespoonful of lard or butter; mix this with a pint of

sour or butter-milk; then dissolve a large teaspoonful of saleratus or soda in warm water, and stir it in. If you wish for a loaf, mould it with water into a bread-pan; if biscuits, shake flour upon the moulding board—enough to move and handle it easily—roll it to the thickness of half an inch, and cut them with the cover of the dredging-box and bake immediately—for fifteen minutes,—in a quick oven. Sweet milk, with the addition of another spoonful of cream-tartar, the other ingredients remaining the same, makes very nice biscuit; water, with cream, or a trifle more of shortening, may also be substituted to good advantage.

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Cold Starch.

I have not seen anything in your paper among the receipts, that speaks of the manner of making cold starch; but I have a way of my own that I think is a little saving of starch. I take a teaspoonful and a half of starch, and a piece of fine salt, the size of a bean, to a teacup of cold water; this does nicely for collars, shirt bosoms and cuffs, &c. After using, let it settle, then pour off the water, and let the starch dry in cup.

Colebrook, N. H., 1868. SAPHENA.

Lemon Pie.

Grate one-half the outside of one lemon; to the juice and pulp add one cup of water; one of sugar; three tablespoonfuls of flour; use the yolks of three eggs, reserving the whites for frosting, which is to be put on when the pie is cold. Bake with one crust and brown the frosting in a moderate oven.

Corn Beer.

To two quarts of shelled corn add five quarts of luke-warm water; one pint good yeast; one pint of molasses; two tablespoonfuls essence of wintergreen. Let it stand in a cool place through the day, bottle at night, and drink in the morning.

"Mary Morrison's Fruit Cake."

Three cups of butter; four cups of sugar; six large eggs; five cups of flour; one-half cup of molasses; one-half cup of milk; two pounds of raisins; two pounds of currants; one-half pound of citron; two wine glasses of wine or one of brandy; one teaspoonful of saleratus. Bake four or five hours. Will keep six months. EMILIE.

West Campton, N. H.

Sponge Cup Cake.

Two cups of sugar; three of flour; one of milk; one-half cup of butter; four eggs; one teaspoonful of soda; two teaspoonfuls cream-tartar; flavor with lemon.

Citron Cake.

Four eggs; one cup of butter; one of milk; two of sugar; three and one-half of flour; one teaspoonful of soda; two teaspoonfuls of cream-tartar; one-half pound of citron.

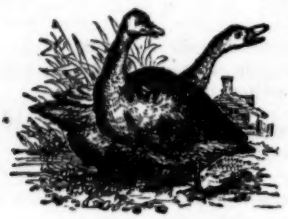
Lemon Cake.

Three cups of white sugar; one of butter; one of milk; four of flour; five eggs; one teaspoonful of soda; lemon; two cups currants.

Railroad Pudding.

The receipt for railroad pudding, contained in the Sept. number, 1867, may be very much improved by adding one cup of raisins chopped fine, and eating with a nice sauce.

MRS. REUBEN D. PULSIFER.

Stetson, Me., 1868.

REMARKS.—We are much obliged to our correspondent for the commendation bestowed on the FARMER. We shall endeavor to retain her good opinion. We have several communications on file for this department of our paper.